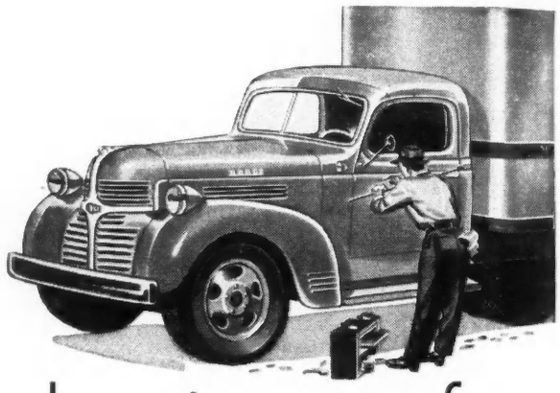
# COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

MAY 1946


*Check your driving. Check your truck. Check accidents!*

## TRUCK OPERATORS SAY:



# "There is no substitute for *Job-Rated* pulling power"

There isn't a long-distance hauler in America who doesn't know how well Dodge *Job-Rated* trucks "stood up" through four years of war. And most of 'em know *why*. . . . They know that trucks powered with exactly the *right* engine deliver maximum pulling power at minimum cost . . . that trucks built with the *right* transmission, clutch, and every other unit perform better, longer, and at rock-bottom cost. . . . Truck operators *know trucks*—that's "for sure." They know the soundness of the "Job-Rated" idea. And they'll never forget the ready availability, even in wartime, of Dodge dealers' service and factory-engineered parts. That's why so many are now switching to trucks that *fit their jobs*—economical Dodge *Job-Rated* trucks.

DODGE DIVISION OF CHRYSLER CORPORATION


**DODGE *Job-Rated* TRUCKS**

FIT THE JOB . . . LAST LONGER

LISTEN TO THE MUSIC OF ANDRE KOSTELANETZ, WITH FAMOUS GUEST STARS, THURSDAYS, C.B.S., 9 P.M., E.T.

# COMMERCIAL CAR JOURNAL

*with which is combined Operation & Maintenance*
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## EDITORIAL CONTENTS






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Above is a specimen of the equipment Gateway City Transfer Company used 50 years ago.

# GOLDEN ANNIVERSARY!

## GATEWAY CITY TRANSFER COMPANY STARTED 50 YEARS AGO WITH A DRAY AND A PAIR OF HAY-BURNERS

## Now Operates 173 Trucks, 136 Trailers and Employs 560 People

WALK INTO the general offices of Gateway City Transfer Company at La Crosse, Wisconsin, today, and you see rows of men and girls at work in the orderly manner you identify with a bank.

In the repair and maintenance shops, the work goes forward with the quiet efficiency you identify with a large manufacturing establishment. The same quiet efficiency is found in the body repair and paint shop.

### HAULS INTO 5 STATES

Yet when Gateway City Transfer was founded 50 years ago, a dray and a span of hay-burners were its equipment. Today the company hauls a long and diverse list of commodities into five states from 18 terminals.

Gateway got into truck transport in 1928, with a haul from La Crosse to Decorah, Iowa. In 1931 a raise in rail rates gave it opportunity to open up a Chicago run. In 1934 it extended its routes to the Twin Cities.

Among the many impressive things about Gateway, these stand out:

The second generation management in the hands of W. Leo Murphy, president, and E. W. Murphy, secretary-treasurer, both of whom returned from other enterprises to continue the business founded by their father.

The emphasis placed on personalized service to the shipper.

The complete medical check-up given all drivers every year.

The company's safety achievements, eight drivers having gone eight years without an accident, five having gone seven, six having gone six, and eleven having gone five. Four, three, two and one-year records count up to a sizeable total.

Impressive, too, about the Gateway City Transfer Company's operation are the International Trucks in its fleet —trucks of such ability that in the last 15 years more heavy-duty International Trucks have been purchased for commercial use than any other make.

*Motor Truck Division*
**INTERNATIONAL HARVESTER COMPANY**
180 North Michigan Avenue — Chicago 1, Illinois

Below: A few of the many International Truck Tractors Gateway City operates.


Below: W. Leo Murphy, president Gateway City Transfer Company, gives last minute instructions to one of his drivers.

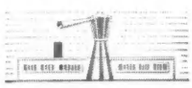

LISTEN TO "HARVEST OF STARS" EVERY SUNDAY, 2 P.M. E.S.T.I NBC NETWORK

INTERNATIONAL

**INTERNATIONAL Trucks**

# This Month's PAYLOAD


- ***Super Shop for Southern Carrier***



Accessibility is one feature that makes this a super shop. Each of the 12 bays has its door, some have two. Another feature is the boss' balcony office. He sees what goes on. Details of these and other super features are found on Page 38

- ***Outlook on Tire Production, Quality, Prices***

After a thorough survey of tire plants, our Detroit News Editor comes up with cheerful data. While he goes into details, the data add up to: There'll be an ample supply by mid-summer; they'll be better at no increase in price. Page 40

- ***Winch-Loader Cuts 7:40 Man-Hr. per Loading***

This article may give you some profitable ideas. It tells about a bakery fleet that designed an ingenious device to speed loading and unloading of its trucks. Not only does it work, but payload has been increased by 1000 loaves. Page 42

- ***Coordinated Maintenance Unites Scattered Fleet***


Here's a fleet that operates 14 shops, large and small, to service its 650 vehicles scattered over more than 50 communities in three states. For solid dope on the best PM methods, this is recommended reading for all fleetmen. Page 48

- ***Keeshin Sets Postwar Equipment Specifications***

Reversing the usual procedure, this fleet operator told truck manufacturers just what he wants in postwar trucks. He has worked up specifications on the basis of his experience and performance. The article discusses them in detail. Page 54

- ***"I SUGGEST" . . . How to Pick Good Ideas Out of "Boxes"***

It's a good feeling to know that your employees are constantly thinking of ways and means of improving your business. In this article, the personnel manager of Consolidated Freightways gives out with ideas you could adopt. Page 56

**. . AND those of you who have been reading "Letters from Readers"—particularly you who have written letters about standardized instruction cards—will be interested in J. Willard Lord's analysis of those letters. Here's a hint from the article's title, 92% Favor Instruction Cards," Page 36 . . . If you're digging diesel dope, dig up "Diesel Fleet's Program for Million-Mile Performance," Page 53. More than half of this fleet—as good as new, if not better—has been written off the books as having paid for itself . . . How cleanliness not only can pay for itself but bring extra dividends, is described in "Planned Cleanliness Pays Off in Increased Efficiency," Page 62. If you are planning a new shop, this is "must" reading . . . Another "must" is "Warborn Greases Set New Ideals of Performance," Page 66, which points out that gone are the days when any grease will be good enough for rears and transmissions—that is, if you dislike tearing them down frequently . . . Exciting news for many fleet operators is Continental's development of a new diesel engine that can be converted into a gasoline burner, if desired. Many parts are identical to those of the Red Seal engine. For other details see, "Continental's New Diesel Interchangeable with Gas Jobs," Page 74 . . . Now you have a sample of the solid cargo aboard. For the lighter part, and lusty laughter, check the Table of Contents on Page 33.**


# Favor Instruction Cards

**8 per cent favor manuals; 77 per cent willing to pay for first-class instructions, and 85 per cent accept proposed 14x18 size**

**by J. WILLARD LORD**
Safety Engineer, The Atlantic Refining Co., Philadelphia
Chairman, SAE Subcommittee of Standard Service Instructions


J. Willard Lord

I HAVE read with much interest the comments appearing in COMMERCIAL CAR JOURNAL regarding Standard Practice Instructions, since they were proposed in an article by me in the October, 1945, issue, and appreciate the sincere character of the many letters which have been written. Surely, the comments indicate that shop supervisors would like to have the best of maintenance instructions developed in some form so as to make the information more readily available to maintenance mechanics. And, apparently, the idea of single instruction sheets seems, with few exceptions, to appeal as a reasonable answer to the problem.

There has been a total of 64 answers reprinted in the December, 1945, January and February, 1946, issues. And I think it would be of interest to analyze these.

1. *92 Per Cent favored Standard Practice Instruction Cards.* One supervisor asked for "Job Procedure Sheets." It should have been brought out more clearly that a basic requirement of all standard practice instruction is that each job to be presented must first be thoroughly studied to develop the best and most efficient step by step procedure, and the instructions on the cards must present this procedure.

Two supervisors suggested that the cards be punched at the top and fitted with a grommet.

Two users of White Standard Practice Cards spoke most highly of them.

One thought the cards should be bound. This would keep them in order, but it would lose all the flexibility and the many applications of single cards.

2. *8 Per Cent favored Manuals.*

Two who favored manuals wanted them to be improved and much more instructive.

Three felt that both manuals and cards were needed—manuals for the office and cards for the shop.

Four supervisors made manuals their choice and indicated they feared that cards would get lost or misplaced. I believe this fear is without sound foundation, at least in the experience of my company we have been using single sheet lubrication cards for 12-14 years and we know that the men use them, file them correctly and, generally, take good care of them. They really work and are of help to the men on the job.

3. *77 Per Cent considered it reasonable to pay for first-class instructions.*

The remaining 23 per cent did not discuss the matter of purchase and we do not know how they feel about the matter.

One supervisor expressed the opinion that the first set of instructions should be "No Charge" but that additional cards should be paid for.

4. *85 Per Cent accepted the standard size of 14 x 18.*

10 per cent of the group suggested cards about a third smaller, if they would work, but did not want them if they were too small for a good job.

The remaining 5 per cent proposed smaller cards largely because they wanted to put them in present file equipment.

### Large Illustrations Need Room

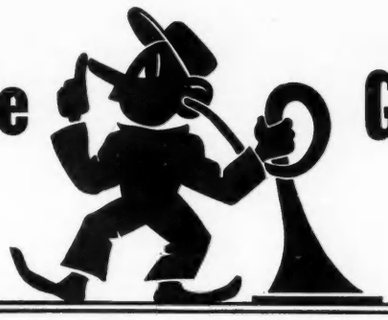
THE matter of size, I think, is particularly worthy of comment. In the first place, I realize that most of those who have shown so much interest as to write have not had the benefit of actually handling 14 x 18 cards. They sound big—the first time you see one, it seems big—but within a day or two it seems to shrink in size and be a most handy size.

It is evident that a big majority appreciate that if the typical maintenance operation is going to be thoroughly presented with plenty of illustrations, that adequate space must be provided, and thus they accept the SAE standard size of 14 x 18 as large enough to accommodate itself to the material it is necessary to present, yet not so large that the card cannot be conveniently handled.

Some of the comments regarding size reflect possibly wishful thinking, and not so much real study of the problem, and the comments could be

(TURN TO PAGE 152, PLEASE)

# EARS to the GROUND



### Steer on Steering

Ever since hearing it casually mentioned at an SAE meeting, one of this department's operatives has been hot on the trail of a new type of mechanical steering gear for heavy-duty vehicles, said to be capable of steering ease without power. He has tracked it down and now knows where it is being developed. His lips are sealed as to the name of the developer, but he does say that this steering gear is closer to availability than anyone realized. He bid us to be patient for just about three months.

### Bell-Ringing Ring

Another representative of this department has run across an unusual kind of piston ring. It's a flexible oil control ring, said to have unusual merit as to performance. One of its features is that of conformability to any shape of the cylinder bore. Although there is reason to believe the ring already is in production and in actual use, no announcement has been made publicly. Steps have been taken to get details for publication at an early date.

### Public Poll Kept Private

**One of the public opinion polling outfits has just completed a survey to find out what the public likes and dislikes about motor trucks. The inquiry was underwritten by the Automobile Manufacturers Association. But the association's committee on public relations has decided to keep the findings confidential. Suspicious minds will infer that the results must have been very unfavorable. Shame on yez!**

### Packaged Heat

An active program of developing equipment for heating and ventilating motor truck cabs as well as solving the allied problem of improving the engine cooling system of heavy-duty vehicles is under way at Evans Products Co., Detroit. The Evans system of heating and ventilating truck cabs, and the fan with automatically variable pitch, described in last month's issue, were the first fruits of this activity. In the near future you will get details of a new line of self-contained truck cab heater and defroster units which, unlike the ventilating system, can be installed readily in any of the existing cabs.

### Measurement for a Suit

Newspapers, you may have noticed, reported that the Department of Justice had brought suit against major tire manufacturers for alleged anti-trust violations. Our Washington gumshoe reports that the Attorney General has simply authorized a Federal grand jury investigation—not at suit—in the Southern District of New York concerning complaints of monopolistic practices of tire manufacturers. Best information is that the squawks are by smaller companies or competitors of the big ones. Basis of investigation seems to be that the little fellows say the big boys are squeezing them out of business.

### Torque About Converters

*Several manufacturers are working energetically on torque converters for use in heavy-duty trucks. The torque converter, in combination with a suitable gear box for adequate low gear ratios, should be a natural for truck operators. We have our eye on several different makes and will keep you informed. Experiments are not confined to heavy-duty trucks. One converter is now getting a field workout on a door-to-door delivery truck.*

### Hydraulic Power Drive

One of our Detroit detectives has uncovered evidence that a number of manufacturers are studying the possibility of hydraulic power drive for motor cars. Some time ago it was freely admitted that the experimental Russell car was designed for hydraulic power and was being tested by one of the motor car manufacturers. Since then unconfirmed rumor has it that one of the experimental Tucker cars has been fitted with hydraulic power and currently is under going road testing. Our sleuth has learned that the producer of an unusual type of hydraulic generator expects very soon to start work on the development of a hydraulic power system, using a high performance generator in conjunction with high output hydraulic motors at the wheels. The significant thing is that several passenger car and truck builders are said to have an interest in this development.

### Taken to the Cleaners

*The radio beat us to the announcement that International Harvester was cooperating with the American Institute of Laundering in the development of a model that would meet the needs of laundries and dry cleaners. According to the radio announcement, International has submitted to the Institute an experimental model. We're dickering for details.*

### 1-Tonners With Truck Axles

An interesting vibration centered around two major builders of 1½-ton trucks in Detroit, has been picked up by this department's substitute for radar. After tuning out the interference, the screen flashes forth the information that the companies are seriously considering a 1-ton model with front and rear truck axles, not beefed up conventional car chassis like pickups have.

### GMC Goings On

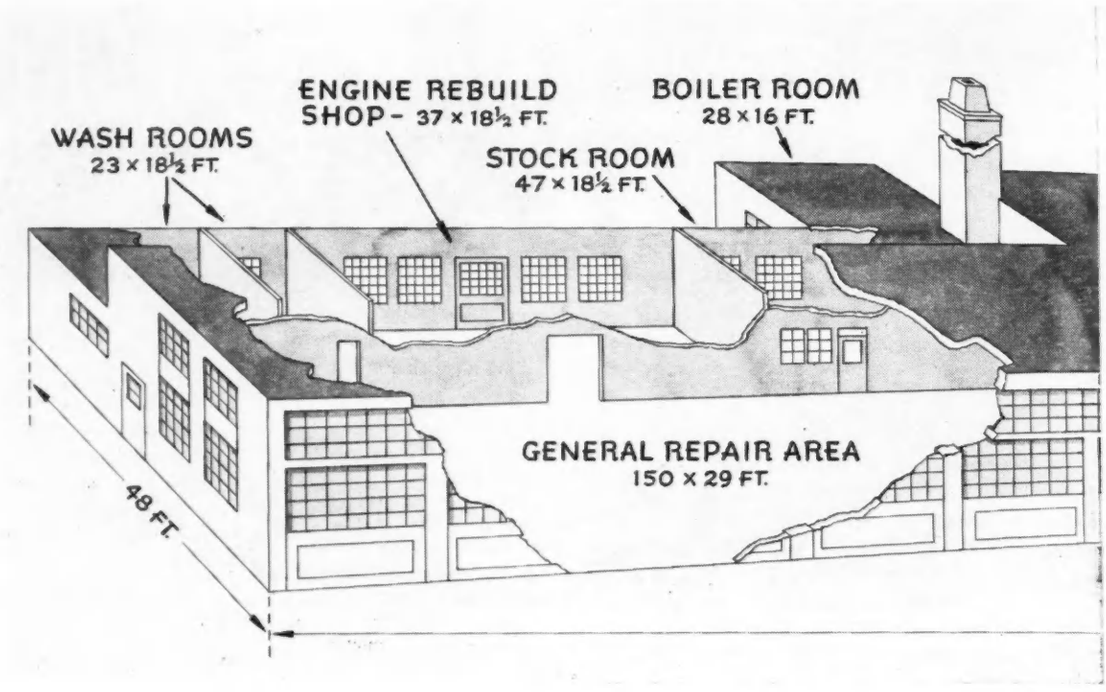
**It looks now as though GMC Truck will break out its new model trucks late in July or August. The reason for the delay, it is understood is that the company must use up its allotment of materials granted last year by WPB to build its quota of current model civilian trucks. The four-month GM strike delayed finishing up the model run and consequent introduction of new models. Reports indicate that GMC will have one of the most complete lines of models in the industry.**

### Checker-Trailer Checked

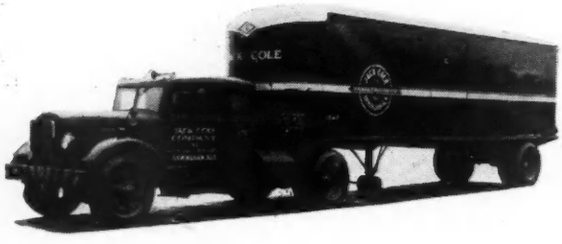
*Quaker Cab Co., Kalamazoo, Mich., is in production on an inexpensive 1-ton trailer which is being distributed through one of the major national chain stores. The trailer is said to retail for about $200. It is being built on the Army trailer production line.*

### Low-Priced Ford a Fact

**The light-weight, low-priced Ford car mentioned here in January has been removed from the rumor class into the realm of reality. Ford has announced the formation of a low-price car division, and made known that the new car will be presented publicly sometime after January, 1947.**



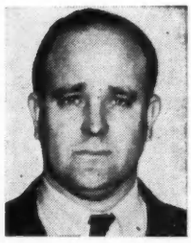

*Cutaway view showing principal shop units*



# Super Shop

**"WE CAN SPOT THE LACK OF ACTION AND ASK WHY"**

**. . . "we believe good maintenance requires good supervision, and good supervision requires an intimate knowledge of what's going on. From a desk in that big bay window, which projects four feet out into the general shop area, we can get details first hand. It's not a matter of spying, but being able to know what equipment is in the shop (our numbering system is big enough to catch at that distance) and to make our plans accordingly. True, also, is the fact that if we know an engine is to come out of No. 56 and should be out by noon, and we see it still in the truck by 3 p.m., we can spot the lack of action and ask why."**



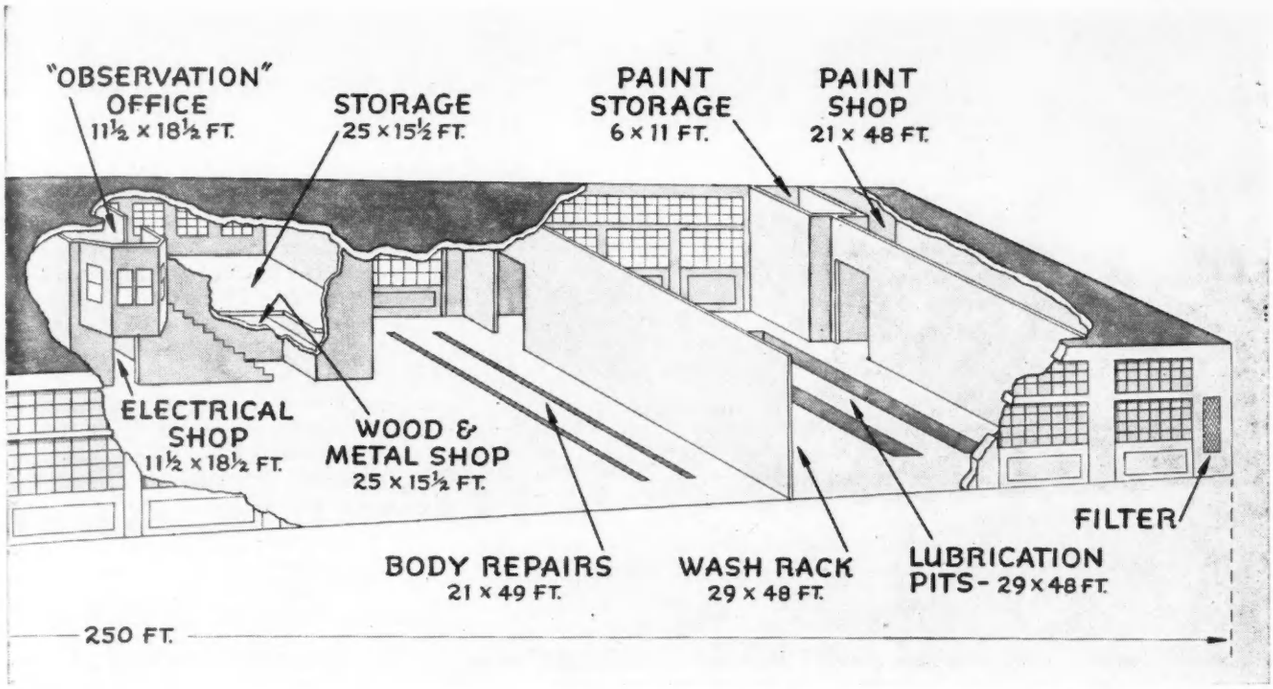
**P. E. Anderson**

DURING the past few months we've spent a lot of time checking, rechecking and generally sweating out the final building phases of our new service shop. By the time you read this story there is every hope that we will be in and well established, though the paint may still be tacky in spots.

As this is the only shop for our fleet, now operating from Atlanta to Boston, and as far as 1400 miles from home base, we figured it had to be good. Actually, and without bragging, we sincerely believe it incorporates just about everything a fleetman could ask for in the way of truck-tractor and trailer maintenance. It is designed to handle the complete maintenance, down to and including complete frame and body straightening and rebuilding, of about 100 tractors and 200 semi-trailers. About half that many are currently operated by our biggest leasing customer, Jack Cole Co., Inc. (Jack Cole is president of both the leasing and operating companies.)

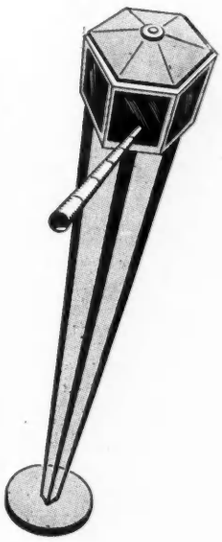
### Supervisor on Mezzanine

LET'S begin with a passing comment on that little mezzanine floor you see featured in the accompanying plan. It just didn't happen. We incorporated it in the plans as an important feature, for we believe good maintenance requires good supervision, and good supervision requires an intimate knowledge of what's going on. From a desk in




*Inside height is about 20 ft., reduced to 12 ft. at left rear. Concrete trailer jig is shown in "Body Repairs" section.*

# for Southern Carrier



**Takes full advantage of natural lighting, has unusually complete facilities for all types of tractor and trailer maintenance, features a balcony look-out for the boss**

**by P. E. ANDERSON**
Service Supervisor, Motor Equipment Leasing Co., Inc., Birmingham, Ala.

that big bay window, which projects four feet out into the general shop area, we can get details first hand. It's not a matter of spying, but of being able to what equipment is on the shop (our numbering system is big enough to catch at that distance) and to make our plans accordingly. True also, is the fact that if we know an engine is to come out of No. 56 and should be out by noon, and we see it still in the truck by 3 p.m., we can spot the lack of action and ask why.

### 12 Well-Lighted Service Bays

NOW with our feet on the ground, let's take a look at the 12 service bays at the left front, each with its own 10-ft.-9½-in. by 14-ft. door, permitting easy access without hav-

(TURN TO PAGE 136, PLEASE)

CCJ SURVEY

# Outlook on Tire

**NEW TIRES WILL CONTAIN MORE NATURAL RUBBER**

**Here's a really encouraging outlook:**

**"The most popular over-the-road sizes—8.25 to 11.00 and 12.00 and 14.00 — are in good supply. The smaller sizes—6.00-16, 6.50-16, 7.00-16, 7.50-16, and 7.00-15—still are not too plentiful, but production is catching up fast.**

**"Following is the lineup showing how the various sizes have been brought back in percentage of natural rubber:**

**"6.00, 6.50 and 7.00 (6- and 8-ply) which were S-3 (100 per cent synthetic) now are S-4, 13 per cent natural rubber. 7.00 and 7.50 10 ply, and 7.50 10-ply on 17, 18 and 20 in. rims are up from 13 per cent natural to 23 per cent (S-9). 7.50-16, 6- and 8-ply have moved up from 13 per cent natural to 33 per cent (S-6). 8.25 and up now carry about 67 per cent natural rubber (S-7) compared with approximately 33 per cent.**

MORE and better truck tires are on the way. For the first time since the early days of the war, we can report a really encouraging outlook after a survey of the tire industry. Not only will the truck operator be able to step out and buy the tires he needs when he needs them by about mid-summer, but he will be getting a better tire than those he bought during the last year and probably at no increase in price. In fact, there is a possibility that he may not pay as much as now. Any way you look at it, it adds up to lower tire costs per mile, which certainly is a welcome reversal of the continuing trend toward mounting costs in every operating category.

### Truck Tire Production High

THE tire factories are turning out tires like a doughnut machine. During the first quarter of this year, the industry produced approximately 3.8 million truck and bus tires, which is about 700,000 more than in the preceding quarter. With this high rate continuing at present, it is estimated that in another month or two, the seller's market will be but a memory and the buyers again will be in the saddle.

This is generally true for the overall picture, of course, but there may be a deficit in some sizes for a while longer. For example, one company says that it will not be able to meet the demand for 11.00 tires for a few more months because of a shortage of molds to meet the increased demand occasioned by so many operators going to the larger size. However, the most popular over-the-road sizes—8.25 to 11.00 and 12.00 and 14.00—are in good supply. The smaller truck sizes—6.00-16, 6.50-16, 7.00-16, 7.50-16, and 7.00-15—still are not too plentiful, but production is catching up fast. In some sizes, warehouses in certain parts of the country already were able to accumulate small inventories as early as late March, and tire salesmen were getting out to scratch for business.

### Passenger Car Tires Low

PASSENGER car tires, however, still are in a modified famine classification and, from all reports, are likely to stay there until late this year or early next year. Estimates of production for 1946 range up to 73 million units, but this will not be enough to meet the demand for original equipment and replacements. Production last year was 28,147,538 casings.

A comparison of truck and bus tire production in 1941 with that of 1945 shows how the tire makers have bumped their capacity. Just before the war, in 1941, the largest year up to that time, output was 11,148,278 units. In 1945, it was 16,346,411, an increase of at least 50 per cent when the figures are weighted to account for the greatly increased material and labor required in the manufacture of heavy combat tires made during 1945.

### More Natural Rubber Used

THE reason that truck tires now are better than they were last year lies in the increase in percentage of natural rubber to synthetic that now is going into all truck and bus casings. Following is the lineup, showing how the various sizes have been brought back in percentage of natural rubber:

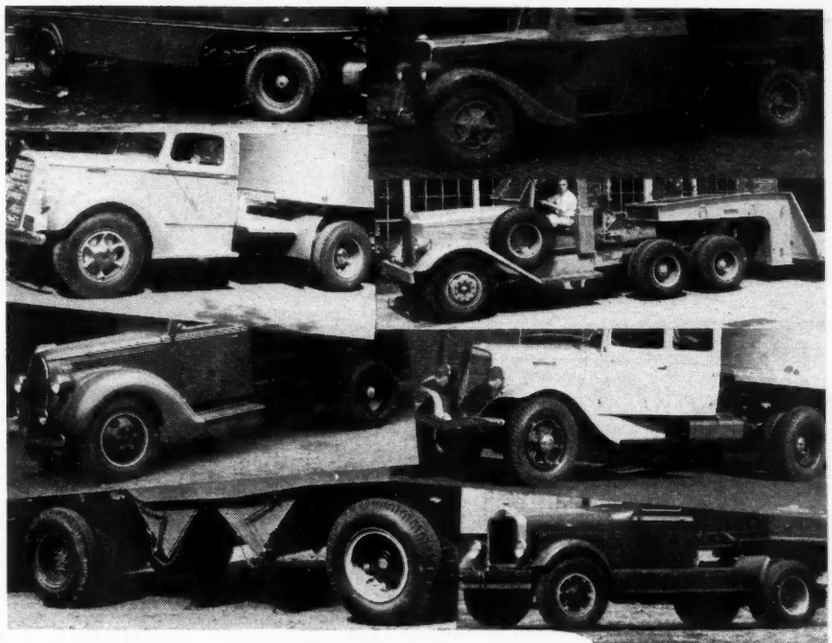
6.00, 6.50, and 7.00 (6- and 8-ply) which were S-3 (100 per cent synthetic) now are S-4, 13 per cent natural rubber. 7.00 and 7.50 10-ply, and 7.50 10-ply on 17, 18 and 20-in. rims are up from 13 per cent natural to 23 per cent (S-9). 7.50-16, 6- and 8-ply, have moved up from 13 per cent natural to 33 per cent (S-6). 8.25 and up now carry about 67 per cent natural rubber (S-7) compared with approximately 33 per cent.

Under the new marking system, tires with more than 50 per cent and up to 94 per cent natural rubber are simply marked "S." Those with less than 50 per cent crude carry the "S" and a numerical designation, whereas those with more than 94 per cent bear no designation at all.

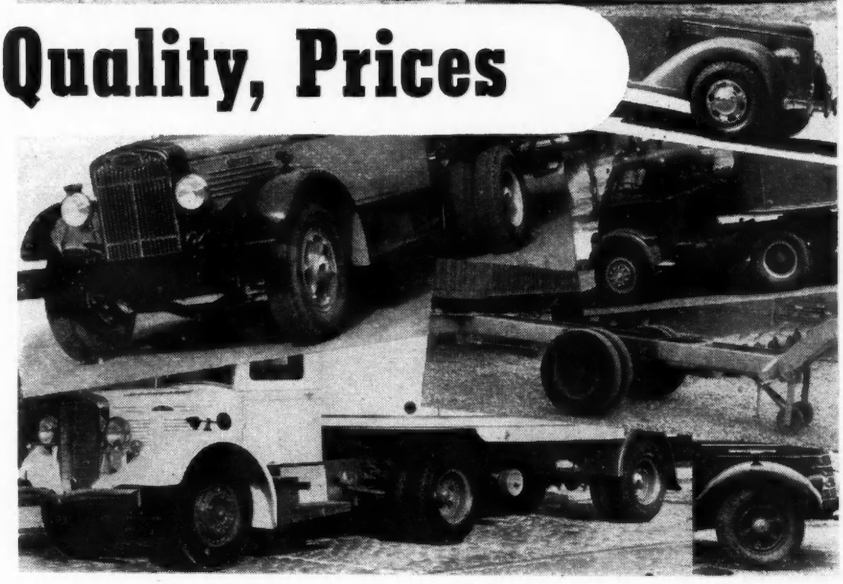
AND RAYON CORDS

**"Under the new marking system, tires with more than 50 per cent and up to 94 per cent natural rubber are simply marked 'S.' Those with less than 50 per cent crude carry the 'S' and a numerical designation, whereas those with more than 94 per cent bear no designation.**

**". . . Probably the most important development is the adoption of rayon cord in place of cotton, which was generally used before the war."**



# Production, Quality, Prices



**First quarter 1946 production exceeded previous quarter by 700,000; more natural rubber and rayon cord being used; price jumps unlikely; wider rims, larger wheels favored**

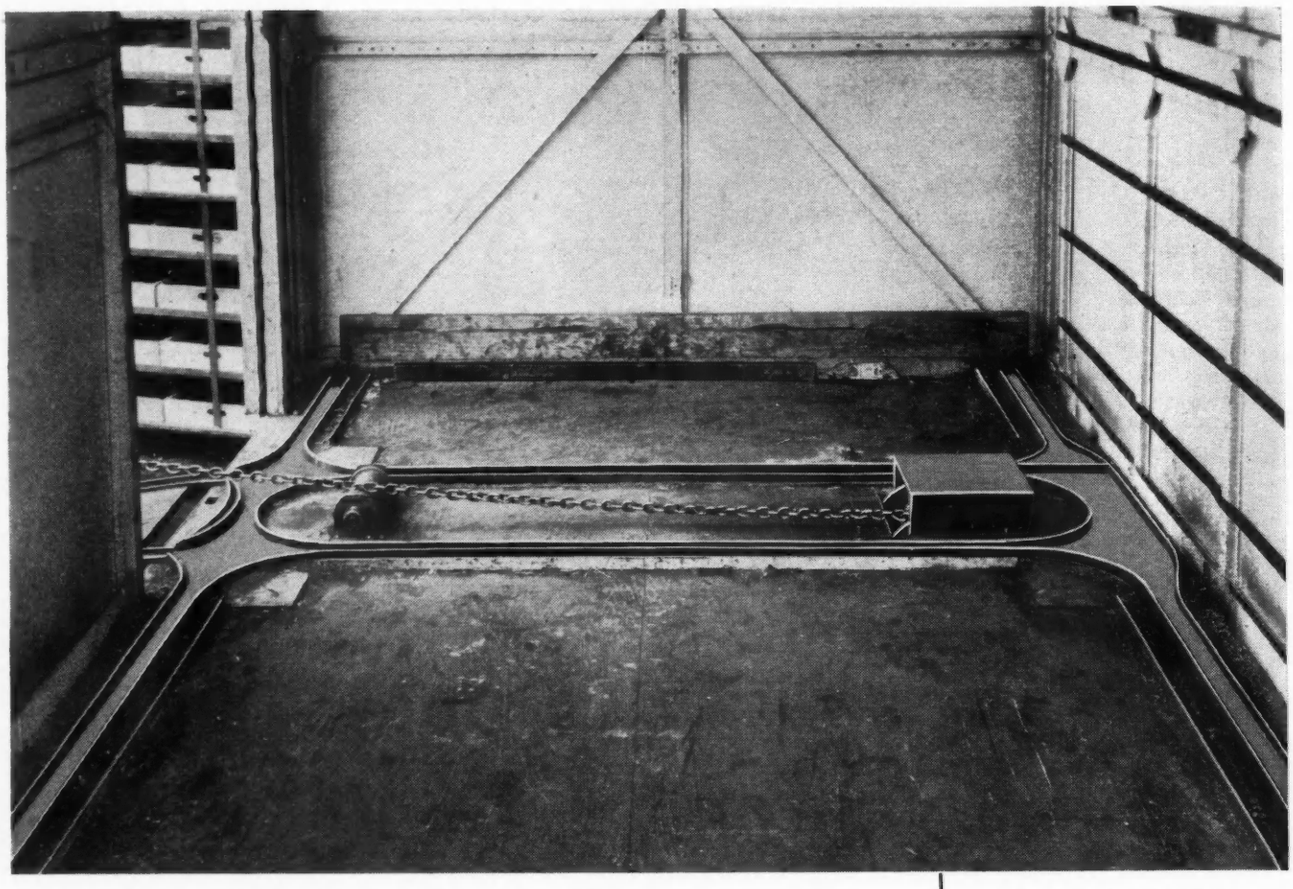
**by LEONARD WESTRATE**
Commercial Car Journal Detroit News Editor

### Rayon Cord Gains

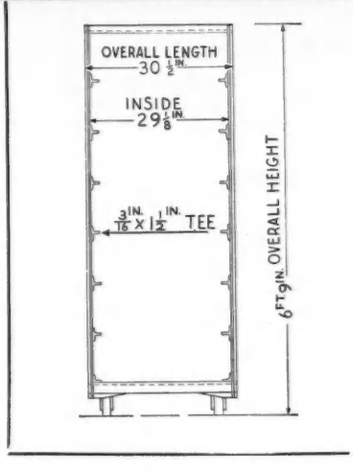
HOWEVER, the boost in percentage of natural rubber is not the only contribution to a longer wearing and generally more satisfactory truck tire. Probably the most important development is the adoption of rayon cord in place of cotton, which was generally used before the war. While tire development engineers will not go so far as to say that present tires containing synthetic are better or as good as prewar 100 per cent rubber tires, they say the product now is generally very satisfactory and when more crude rubber is available or synthetic rubber is developed to its ultimate stage, the resulting product will be far superior to any tire yet built. They are not yet prepared to say definitely whether the future truck tire will be a combination of synthetic and natural rubber. but the consensus is that with synthetic already proved superior in some respects and further improvement possible in compounding, it is very possible that eventually truck tires will combine the best properties of both kinds of rubber.

So far as cord material goes, rayon now has the field. Tire men say that

(TURN TO PAGE 130, PLEASE)



*Rear-view of one of Langendorf's bodies showing built-in tracks, on which racks are rolled, and winch mechanism which speeds loading and unloading*

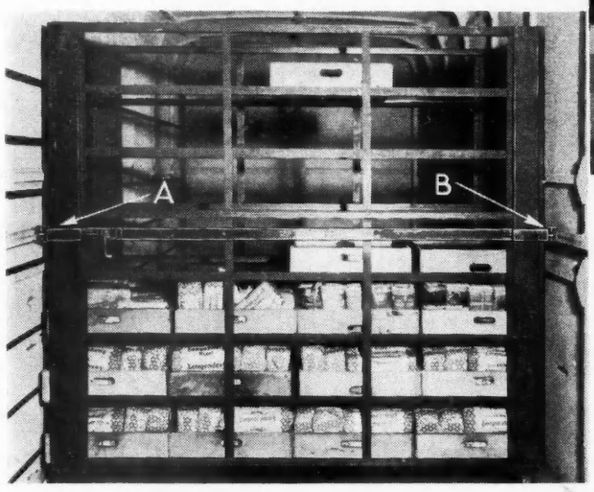


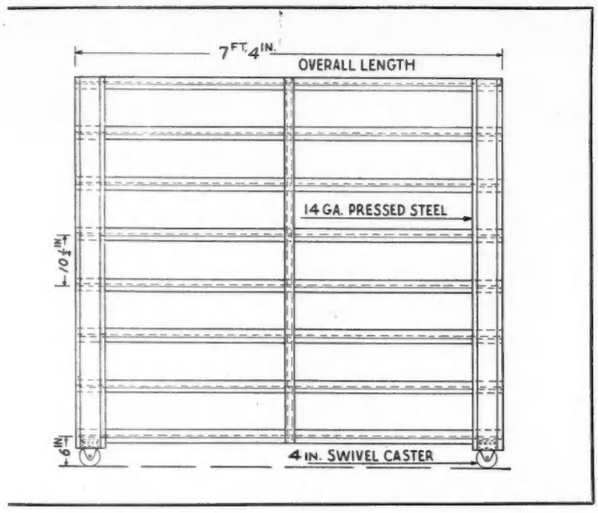

# WINCH-LOADER Cuts 7:40 Man-Hr. per Loading

**One man with built-in electric winch, equipped with 30-ft. cable and using 15-ft. skid, loads in 20 min. what took two men 4 hr.; unloading also speeded. Payload up 1000 loaves**

ONE man does it in 20 minutes—formerly it took two men four hours! That's the experience record of Langendorf United Bakeries with its ingenius electric loading winch and track installation. In use for the last two years by this large West coast bakery, the device provides bakery fleet operators with a new conception of economical and efficient operation. In addition to the huge saving of man-hours, the capac-

*Illustration at right shows how easy it is to load a trailer with the winch-loader. Man merely connects winch chain to rack, pushes switch at end of extension cord and the fully loaded rack rolls up the ramp into body, where it is pushed into position manually. Unloading is just as simple. Illustration below shows new type rack which increased payload 1000 loaves. Arrow A and B show how racks are locked into position to permit balancing and prevent load shifting. Drawing at bottom shows construction details*


**SPEEDS UNLOADING, TOO**

**" . . . Unloading is a simple procedure. The ramp is put in place at the open door, the control button is pressed to put the winch in reverse, and a slight pull through the open door starts the heavy rack down the ramp. After the operator unloads the first rack, he merely has to pull the remaining racks into place at the door, attach the cable and start the winch.**

**" . . . the time saving is tremendous."**

**by R. RAYMOND KAY**

ity load of a trailer has been increased about a thousand loaves.

The winch is mounted in a box approximately 18 in. square, fastened to the underside of the trailer body behind the left rear wheel. It weighs about 125 to 150 lb. and costs about $500. On the opposite side, also slung under the body and just below the door, is another box about 18 in. square carrying the movable control switch unit and extension wire. The electric winch is powered by a reversible ¾-hp. motor and is a standard type with drum and worm drive.

Benton Trerise, Garage Superintendent of Langendorf's 150-truck Los Angeles fleet, told COMMERCIAL CAR JOURNAL, "Under the old system, the bread was taken from the wrapping machine and loaded into trays, 30 loaves to a tray, each tray weighing 40 lb. Trays were then placed on movable racks and rolled out to the dock area. Trucks had to be hand loaded through the rear doors, and the trays had to be picked from the rolling racks individually, placed up into the trailer body and pushed back into the trailer one by one until all eight tiers of trays were loaded, giving a capacity load of 360 trays. This procedure took two men four hours.

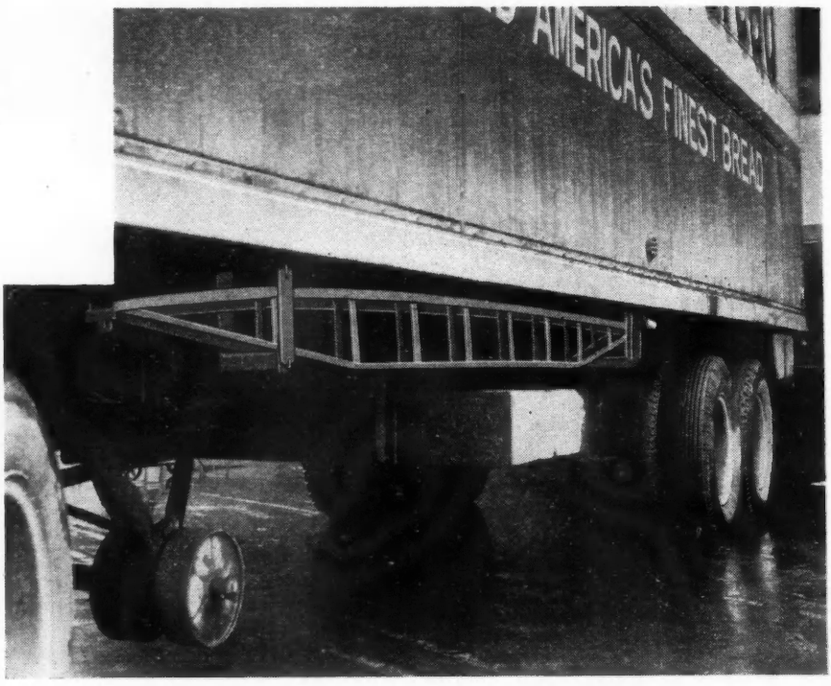
### New System More Efficient

"UNDER the new system, handling is much more efficient. The bread is taken directly from the wrapping machine and loaded in the same type trays as in the old system. The trays are then loaded four to a row, eight rows high, on rolling racks especially built to conform with the dimensions of the interior of the trailer body. When the 32 trays have been placed on a rolling rack in the wrapping machine area, the rack is then rolled out to the dock area and may be loaded directly.

(TURN TO NEXT PAGE, PLEASE)

# Winch-Loader . . .

(Continued from page 43)




*Emergency conditions have been provided for by supplying each vehicle with a 15-ft. skid, shown above, so that loads may be transferred to other trailers*

The trailer is parked broadside for loading, the door, 50 in. wide, is on the right side; approximately 18 in. from the end of the trailer.

"All loadings are from sidewalk level. A 15-ft. skid, with a hand hoist arrangement, is placed at the open door and adjusted to the height of the trailer floor. The pulley, which protrudes from the floor of the trailer just a few inches above the winch box, is then set in motion by the operator using a push button control, and a 30 ft. cable hooked to the bottom of the rolling rack easily draws the loaded rack, which weighs about 1700 lb., up the ramp and into the trailer body. Once inside the trailer, the racks are easily pushed forward by hand; the 4-in. swivel casters on the racks fitting snugly into well-greased tracks running parallel to the sides of the trailer. A capacity load of 12 racks, or an increase of about 1000 loaves over the old method, is accomplished by one man in only 20 minutes.

### Unloading Also Speeded

"TIME saving," Ben Trerise points out, "is, of course, also realized in the unloading process. With the old system, each tray had to be lifted down from the trailer individually and one man had to stay up in the body of the trailer to keep pushing and feeding the trays to the rear end door for unloading. But under the new method, the cable is left attached to the bottom of the last rack as it is drawn through the door into place. Unloading is then a simple procedure. The ramp is put in place at the open door, the control button is pressed to put the winch in reverse, and a slight pull through the open door starts the heavy rack down the ramp. After the operator unloads the first rack, he merely has to pull the remaining racks into place at the door, attach cable and start winch.

"As you can see, the time saving is tremendous. Where 360 trays had to be individually handled under the old system, 12 racks (each with 32 trays) are now unloaded in a matter of minutes with a minimum manual effort."

### Bars Prevent Shifting

SEVERAL additional features of the arrangement have proved highly advantageous. Space bars are used between racks on the loaded trailer in order to take up the few inches of clearance between the racks. Sets of bars, in a locking bar and spring arrangement, can be placed at any spot in the loaded trailer where it is felt sliding or shifting might occur.

Each rack is built with metal cross-beaming at one end so that when the rolling racks are being drawn up into the trailer, or are being lowered back down the ramp, the trays will not slip off. A 15-ft. emergency skid, mounted under the left side of the trailer, is carried in the event a breakdown on the road makes it necessary to transfer the bread to other trucks for completion of the run.

### Side Loading Advantageous

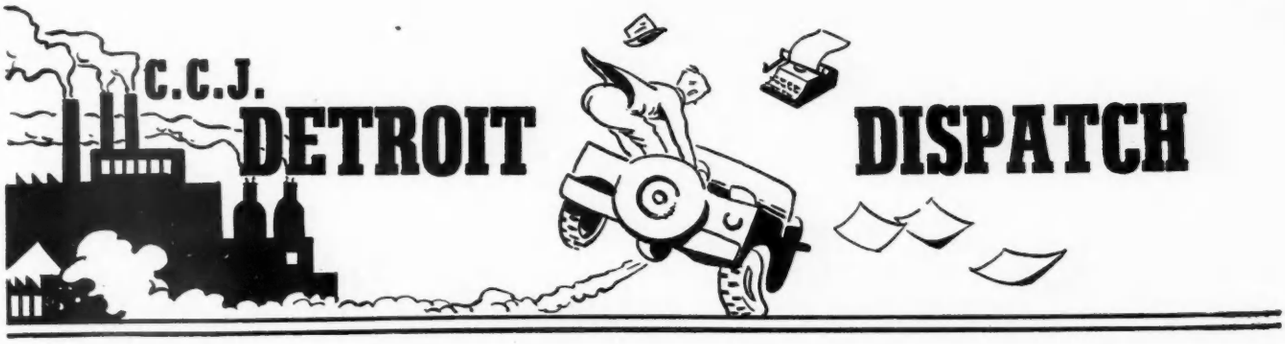
"LANGENDORF'S experience has shown," Benton Trerise further explains, "that there is definite advantage to side loading. The trailer body is strengthened and a safer load is acquired because of better weight distribution. And we've also found that it's best to put a full load of racks and trays aboard, regardless of whether they have bread in them or not, as this serves the double purpose of making a more even load and keeping a proper balance of racks and trays between loading and unloading points."

The winch-loader is not used on docks of trailer-floor height. Here it is not needed, as the racks can be easily pushed by hand much faster than they could be pulled by winch. Of course, the trolley rail arrangement inside the body still is useful.

The Lindsay structure trailer body, built by Yankee Motor Bodies Corp., Los Angeles, Cal., is 32 ft. long, 9½ ft. wide and 8 ft. high. The inside is fully insulated with 2 in. sheet cork to preserve the bread heat.

This installation was made especially for Langendorf and the overall cost of trailer, winch and racks was approximately $3,000.

The idea was originated in San Francisco by Walter Lauderbaugh, Langendorf's Superintendent of Transportation, and has been in use for two years. Experience with the unit has been so satisfactory that it was instituted on the Los Angeles-San Diego daily round trip run of 260 miles.




**Shortages Cut Truck Output . . . Ford Hardest Hit . . . Fleets Getting Attention . . . Truck Price Scuttlebutt . . . What's Interstate Commerce? . . . Court Ruling Would Be Ruinous . . . Legislative Relief Likely**

**by LEN WESTRATE**
**CCJ Detroit News Editor**

## Shortages Cut Truck Output

There isn't much optimism in Detroit these days over the truck production curve projected over the next several weeks. The facilities are here and are in prime shape for turning out trucks with the precision of a meat chopper, but the lines still are running on a hand-to-mouth basis on materials. The biggest problem at the moment is steel and as this is written at the end of April, the outlook grows more grim by the day with the continuation of the coal strike. Reserve stocks of steel in the hands of the manufacturers are dwindling, but the principal worry is that suppliers will run the string out before the truck makers do. It will take only one major supplier of an important part to close down assembly lines in most cases, so truck makers figure they now are running on borrowed time.

## Ford Hardest Hit

A quick once-over-lightly of the builders here shows that Ford probably is hardest hit by the steel and parts situation. Lines there have been up and down intermittently in recent weeks, and show no signs of being able to settle down for a steady pull. Ford was building pretty close to 1000 trucks a day several weeks ago and since that time has not been able to get beyond that point. The 1000-a-day appears to represent a production plateau off which the company cannot climb at present because of lack of parts. The company had 36 suppliers on strike at one time late in April and while this figure dropped a little a few days later, the flow of supplies is erratic and halting.

The Dodge Truck Div. of Chrysler Corporation is in somewhat similar straits, although does not seem to have the trouble Ford does in keeping lines going. However, here again, scarcity of materials and supplies imposes a ceiling on production. Chevrolet and GMC Truck Divisions of G.M., on the other hand, appear to be doing somewhat better. They had a good chance to stockpile during the strike, but they also buy from outside suppliers and if steel runs out on parts makers, they too will be affected.

## Fleets Getting Attention

Despite the existence of a sellers' market and a not-too-bright outlook for an early balance between supply and demand, truck makers are taking a very healthy attitude toward their fleet customers. One truck sales manager says that his company is really putting pressure on dealers to handle all requests for trucks with utmost equity. All manufacturers here are planning to continue fleet discounts as in prewar days and most are now getting ready to come into the field with expanded fleet services.

Another angle is that sales managers do not view the market ahead as an everbearing orchard of orders that may be had for the picking. They say that with projected production schedules what they are, it will not take too many months after production hits full stride before the companies will have to begin scratching a bit for business. Practically every company has expanded its facilities for postwar production. At the same time, the demand situation is not quite parallel to that in the passenger car field, since some trucks were built during the war and the total overall demand is not so great and is not expected to last nearly so long.

## Truck Price Scuttlebutt

The truck price order, which OPA has promised fortnightly for the past three months, had not appeared in Detroit at the end of April. None of the manufacturers here knows what to expect from it. Obviously, if the order had come when first promised, there would have been some sizable rollbacks in prices in some models. Now the scuttlebutt has it that there may be some reduction in smaller models built in high volume, but that with increased costs incurred from recent wage increases, these will not be nearly so great as had been planned earlier. On the heavier jobs, many manufacturers are looking for an increase. One company says it has learned through its Washington grapevine that prices for its trucks (mostly 1½-ton and up) are to be boosted about 10 per cent. However, this appears to be pretty high in view of OPA's action on passenger cars. Even though prices are boosted, it is expected that at least part of the increase will be absorbed by the dealer, following the passenger-car pricing procedure. Of course, if the Senate should follow the path set by the House of Representatives and prohibit slashing of dealer margins, any price boost would be passed on to the truck buyer.

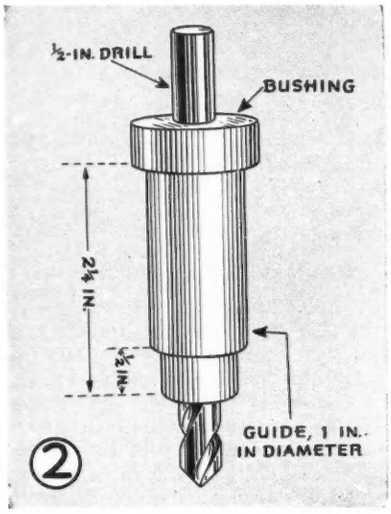
## What's Interstate Commerce?

Truck operators here are watching with considerable apprehension the course of several court actions brought by the Government against trucking companies under the Fair Labor Standards Act. The issues involved are too complex to be detailed here, except in a very general way. The cases stem from a Supreme Court decision which held that employees of a Detroit window washing company which cleans the windows in a building occupied by tenants engaged in interstate commerce are engaged in production of goods for interstate commerce, and as such are covered by the Fair Labor Standards Act. This means that such employees are entitled to overtime pay for work performed in excess of 40 hr. per week, regardless of their union contract for a 48-hr. week, and are eligible for retroactive pay for overtime back to date of passage of the Act. The law specifically exempts three classes of truck company employees—drivers, mechanics and loaders—who come under the jurisdiction of the Interstate Commerce Commission. However, all other trucking company workers now are said by the

(Turn to Page 84, Please)

# SHOP and SALVAGE HINTS

Commercial Car Journal will pay $5 for acceptable shop hints and $5 for parts salvage tips. A snapshot or a rough drawing with a simple explanation is all that is needed. CCJ will polish them for publication. Send one in today! Shown below is a typical contribution—just a rough sketch and a brief statement of the problem and its solution. See how it looks in Fig. 1. This brought Mr. Herold $5. There are other 5 bills waiting for your contributions. Don't underestimate your ideas. Let the editor judge.



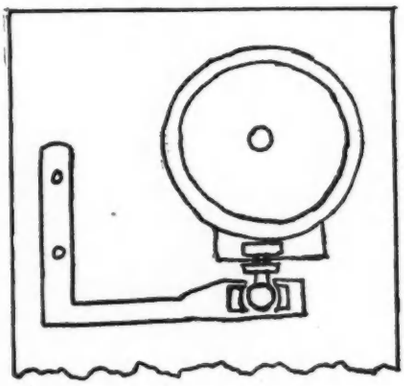

### 1. Adjustable Flood Light

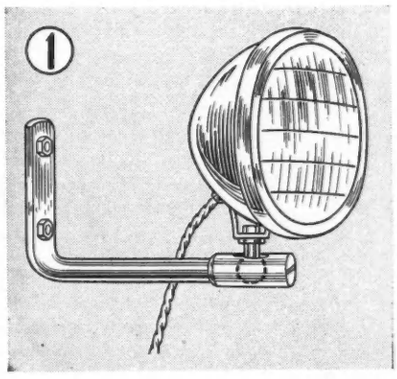
by Alex F. Herold
Superintendent Motors Transport Dept.
Pure Oil Co., Olney, Ill.

Here is an adjustable rear light which we install on our crawler tractors for use when we operate the winch and winch line. It can be mounted on a truck and will expedite many jobs when operating at night.

A regular headlight will do the work. To make the light flexible and adjustable we use the following mounting: We secure a discarded drag link, flatten the rod end and drill two holes about 6 in. apart. These are for mounting to the vehicle. We then bend the rod at right angles as shown in the drawing.

Now we fasten a salvaged ball joint to the headlight and tighten the ball in the socket of the drag link, using the regular springs and parts.





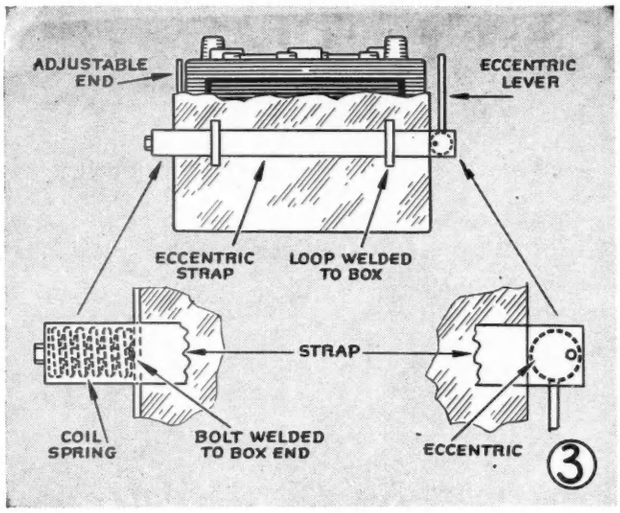

### 2. Spark Plug Change

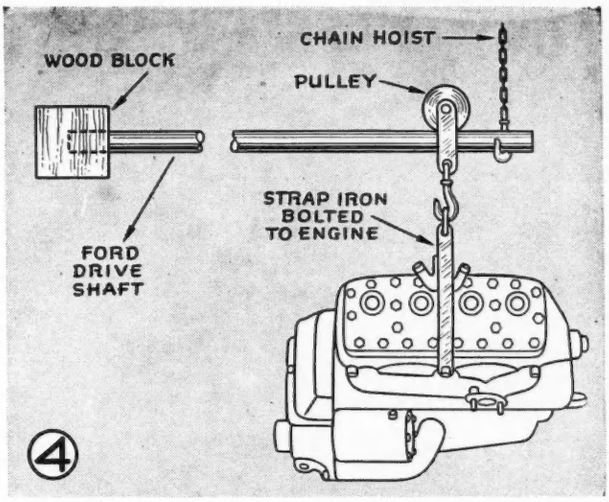
by E. E. Penny
Shop Foreman
Dept. of Streets, Birmingham, Ala.

We have had trouble with the 10 mm. plugs in our Chevrolet trucks so equipped. The electrodes burned out as fast as we installed new plugs. To correct this trouble we enlarged the plug holes in the block with a special home-made jig and installed 14 mm. spark plugs.

We took a piece of cold rolled steel solid bar 1 in. in diameter and 2½ in. long and machined one end down so it would fit the spark plug recess in the block. Using this piece as a guide to get the correct angle, we drilled all the way through the bar with a ½-in. drill. Then we machined another piece of cold rolled steel to fit the plug recess in the same way and drilled a hole through it to accommodate a 14 mm. tap. This guide gave us the correct angle for running the threads in the block. To keep the drill and tap from going in too far and damaging the piston, we fixed a washer of the proper thickness between the guide and the chuck.

We drilled the holes while the cylinders were at top dead center and covered the drill and tap with gunk




to keep filings out of the cylinders. We blew out each cylinder thoroughly with the air hose after the job to get out any stray bits of metal.

This practice has been 100 per cent successful both from the standpoint of eliminating the spark plug burn-out problem and from the fact that no damage has occured from filings.

### 4. Engine Crane

**by George E. Millot**
**Garage Foreman**
**General Baking Co., Springfield, Mass.**

Here is a handy lift we use in removing Ford engines in C. O. E. jobs. It is a time-saver and can be made very easily.

After removing the radiator, grille and intake manifolds, we bolt a short piece of strap iron to the manifold studs at the center of the engine for hooking the hoist hook.

We bolt a block to one end of a Ford drive shaft and set it between the seats. The other end is run through the loop of the pulley and hooked to the chain hoist. We then raise the engine just enough for it to clear the front cross member. Then we roll it out over the cross member on the pulley.

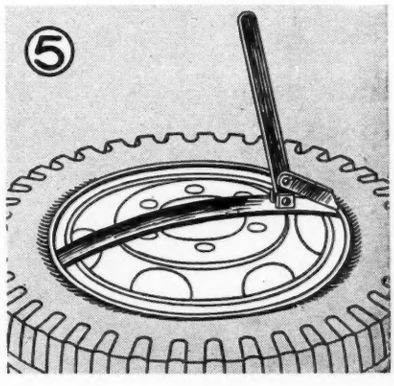
### 3. Adjustable Battery Box

**by William Bonnieman**
**Everett, Wash.**

Our fleet of trucks is of many makes, using all sizes of batteries. It is a problem to have the right size battery when replacements are necessary, especially when a truck breaks down out in the country.

We have built an adjustable battery box to take care of a lot of this trouble. This box is 18 in. high, 18 in. long and 8 in. wide. It is made of sheet iron and is welded together like a regular iron box. One end is moveable, that is, adjustable through an eccentric and lever located at the front end of the box. This built-up eccentric adjusting lever is mounted on the ends of two pieces of strap iron that encircle the battery box. They are held in position by loops welded to the sides of the box.

The sliding end of the box is a square piece of sheet metal with two bolts (one on each side) welded in the position shown in the drawing. Coil springs fit over the bolts, between the sliding end and the eccentric straps. These bolts are inserted through holes in the strap in such a way that the sliding end of the box is continually under spring tension.




When placing a battery in the box, the eccentric lever is raised to let the end slide back. When the battery is placed, the lever is lowered so that the sliding end grips the battery under spring pressure.

### 5. Home-Made Tire Tool

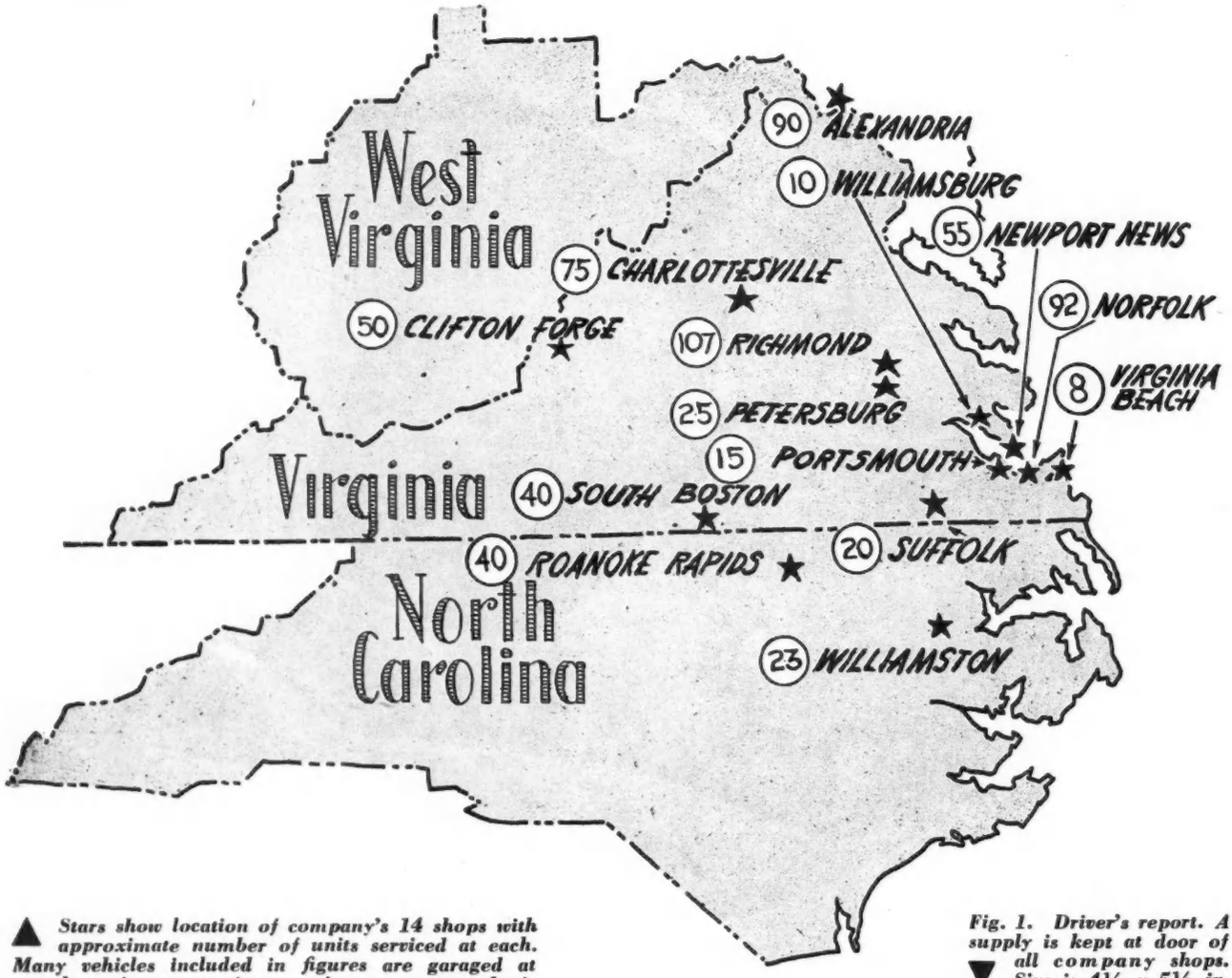
**by William Bonnieman**
**Everett, Wash.**

I have had some trouble mounting new tires that are hard and have stiff beads. Even the old ones with rotten beads are about as troublesome to mount on rims. The conventional tire

(TURN TO PAGE 87, PLEASE)

# Coordinated Maintenance Unites

**Problems of providing uniformly good maintenance for a 650-vehicle fleet having 13 field**




▲ *Stars show location of company's 14 shops with approximate number of units serviced at each. Many vehicles included in figures are garaged at near-by points, get minor service on contract basis*

*Fig. 1. Driver's report. A supply is kept at door of all company shops. Size is 4¼ x 5½ in.* ▼

FORM M-166-1

VIRGINIA ELECTRIC AND POWER COMPANY
VEHICLE TROUBLE REPORT

Driver's Name _____ Date _____ 19__

Veh. No. _____ Make _____ Speedometer Reading _____

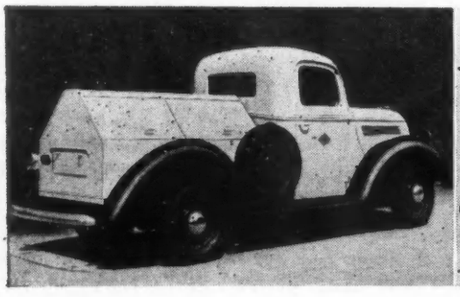
Driver's Check List

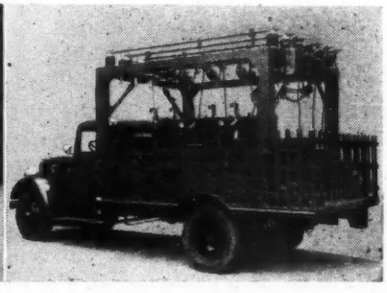
| | | | |
|---|---|---|---|
| Oil Pressure | ☐ | Engine Noises | ☐ |
| Water Temperature | ☐ | Spark Control | ☐ |
| Generator | ☐ | Choke Control | ☐ |
| Lights and Horn | ☐ | Fuel Control | ☐ |
| Speedometer | ☐ | Clutch | ☐ |
| Windows and Doors | ☐ | Gear Shift and Trans. | ☐ |
| Starter | ☐ | Foot-Brake System | ☐ |
| Battery | ☐ | Hand-Brake System | ☐ |
| Tires, Rims and Wheels | ☐ | Steering | ☐ |
| Windshield Wiper | ☐ | Power Take-Off, Winch | ☐ |
| Rear Vision Mirrors | ☐ | Leaks-Oil, Fuel, Water | ☐ |

REMARKS: _____

Date _____ Repaired By _____

*"Honey Wagon" for meter service and complete substation transformer unit typify highly specialized equipment of the operator. At top of opposite page is a more conventional utility line body* ▼





# Scattered Fleet

## shops in two states are solved by effective control methods and efficient PM program

**by K. L. JONES**
Maintenance Supervisor, Virginia Electric & Power Co., Richmond, Va.

BACK in March my boss, Jean Y. Ray, told COMMERCIAL CAR JOURNAL readers about our new headquarters fleet service shop here in Richmond. Now he has asked me to give out with the low down on our rather extensive preventive maintenance program and the plan we use for keeping our widely scattered fleet on the beam.

No fleetman relishes very much the idea of bragging about his own affairs, but we did get a kick the other day when one of the editors of COMMERCIAL CAR JOURNAL came into our shop and had to sneak around for a look at the front grille to tell the difference between our 1942 and 1946 passenger cars. Without my having to say so, that's a fair indication that our maintenance is pretty good.

Our fleet consists of 650 vehicles, of which approximately 150 are passenger cars, 350 are ½-ton utility trucks, each carrying a highly specialized type of body, and 150 are medium and heavy-duty models each with an even more highly specialized job to do, such as that emergency sub-station job, illustrated, ready for action anywhere the power lines or permanent sub-stations may fail. All of these vehicles are ready to roll at a moment's notice with the exception of those few which may be in the shop for a maximum period of one eight-hour day. Four and a half hours incidentally is our time schedule for a two-man team to re-ring and do a carbon and valve job on a V-8 Ford. A rebuilt engine goes in even faster.

**. . . "lest the reader think this fleet is out of his class, because of its size, let me hasten to add that the largest garage, here in Richmond, handles only 107 units. The rest of the fleet is scattered in more than 50 communities throughout Virginia, West Virginia and North Carolina, there being often only a single truck in a given town. This fact, coupled with the diversity of types, makes it a pretty much foregone conclusion that we have all the problems most fleets have. Conversely, most of the ideas we have put into effect can be adopted in whole or in part by nearly any truck user."**

But lest the reader think this fleet is out of his class, because of its size, let me hasten to add that the largest garage, here in Richmond, handles only 107 units. The rest of the fleet is scattered in more than 50 communities throughout Virginia, West Virginia and North Carolina, there being often only a single truck in a given town. This fact, coupled with the diversity of types, makes it pretty much a foregone conclusion that we have all the problems most fleets have. Conversely, most of the ideas we have put into effect can be adopted in whole or in part by nearly any truck user.

The maintenance program begins with the fact that every truck is assigned for maintenance and accounting purposes to one of the company's 13 garages ranging in size from the Richmond shop with its 107 vehicles, and the next largest at Norfolk with

(TURN TO NEXT PAGE, PLEASE)

***Fig. 2. Work or repair order. Every job gets one of these in duplicate. One copy goes to accounting, other to shop. Size: 8½ x 11 in.***

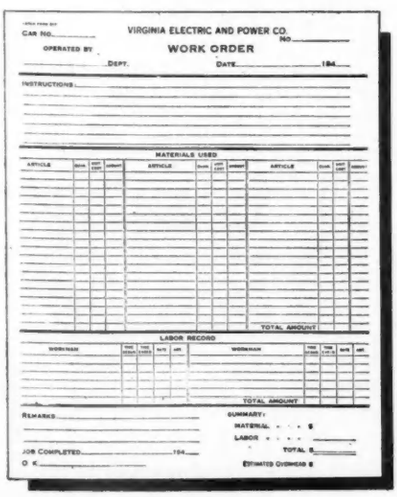
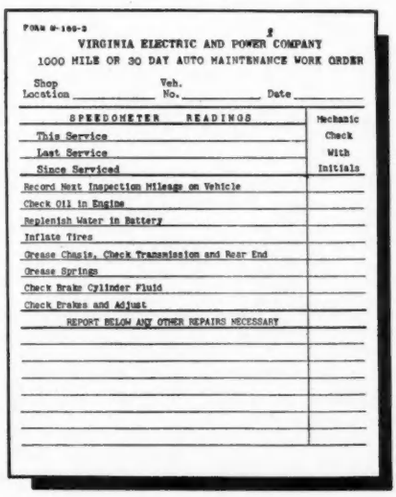

VIRGINIA ELECTRIC AND POWER CO.
WORK ORDER
INSTRUCTIONS
MATERIALS USED
LABOR RECORD
TOTAL AMOUNT
REMARKS
SUMMARY:
MATERIAL
LABOR
TOTAL $
JOB COMPLETED
O K
ESTIMATED OVERHEAD $

***Fig. 3. 1000-mile PM inspection form. This and 5000-mile form on next page are supplemented by complete PM booklet. Size is 4¼ x 5½ in.***


FORM S-100-2
VIRGINIA ELECTRIC AND POWER COMPANY
1000 MILE OR 30 DAY AUTO MAINTENANCE WORK ORDER
Shop Location
Veh. No.
Date
SPEEDOMETER READINGS
This Service
Last Service
Since Serviced
Mechanic Check With Initials
Record Next Inspection Mileage on Vehicle
Check Oil in Engine
Replenish Water in Battery
Inflate Tires
Grease Chassis, Check Transmission and Rear End
Grease Springs
Check Brake Cylinder Fluid
Check Brakes and Adjust
REPORT BELOW ANY OTHER REPAIRS NECESSARY

# ...Coordinated Maintenance

(Continued from page 49)

FORM W-106-2

VIRGINIA ELECTRIC AND POWER COMPANY

5000 MILE AUTO MAINTENANCE WORK ORDER

Shop Location _____ Veh. No. _____ Date _____

| SPEEDOMETER READINGS | Mechanic Check With Initials |
|---|---|
| This Service | |
| Last Service | |
| Miles Run Since Serviced | |
| Check for Oil and Water Leaks | |
| Clean Plugs and Adjust | |
| Dress and Set Breaker Points | |
| Clean Coil, Distributor, Spark Plug Porcelains | |
| Clean Gasoline Screens, Sediment Bulbs, Air Cleaner | |
| Dismantle and Clean Carburetor | |
| Clean Fuel Pump | |
| Check Water Pump | |
| Stop All Exhaust Leaks | |
| Check Generator Charging Rate, Voltage Regulator | |
| Change Cartridge in Oil Filter | |
| Change Oil | |
| Clean Starter - Make Necessary Repairs | |
| Check Horn, W.S.Wiper, Heat Indicator, Oil Pressure | |
| Check Fan Belt - Replace If Bad | |
| Test Motor Compression | |
| Check Lighting System | |
| Tighten Motor Supports and All Motor Mountings | |
| Tighten Bumpers, Bumper Arms to Frame | |
| Check and Clean Battery | |
| Tighten Body Bolts | |
| Tighten Spring Shackles and U-Bolts | |
| Check Brakes and Make Adjustments-Add Fluid | |
| Check Steering Connections | |
| Test and Repair or Replace Shocks if Necessary | |
| Check Clutch and Clutch Throwout Bearing | |
| Adjust and Grease All Wheel Bearings | |
| Tighten Lug Bolts on All Wheels | |
| Remove Squeaks and Rattles | |
| Air Tires and Align Front Wheels | |
| Tighten Fenders and Running Boards, Remove Dents | |
| Check all Glasses and Rear View Mirror | |
| Refill Differential and Transmission-Universal Joints | |
| Put Sticker on Car and Record Mileage | |

▲ *Fig. 4. 5000-mile PM inspection form. This is unusually complete, includes wheel balancing. Routine is standard. Size: 4¼ x 11 in.*

NEXT 1000 MILE SERVICE

NEXT 5000 MILE SERVICE

▲ *Fig. 5. Stickers for instrument panel show when next inspection is due. Size is 2 x 1 in.*

DAILY MOTOR VEHICLE REPORT

VEHICLE NO. _____ DATE _____ DEPT. _____ DISTR. _____

SPEEDOMETER IN _____ THIS IN _____

SPEEDOMETER OUT _____ THIS OUT _____

TOTAL MILEAGE _____

IMPORTANT—A SEPARATE DETACHMENT MUST BE FILLED IN FOR MILES CHARGED TO EACH ACCOUNT. COMPLETE DESCRIPTION IS NECESSARY. FORWARD THIS REPORT INTACT DAILY TO ACCOUNTING DEPARTMENT, RICHMOND, VA.

USE THIS FORM FOR AUTOS AND ½ TON TRUCKS ONLY

| DESCRIPTION OF WORK | MILES | ACCOUNT |
|---|---|---|
| | | |

DRIVER _____

CO. PERMIT NO. _____

▲ *Fig. 6. Daily motor vehicle report, completed for each unit keeps office posted. White for ½-tons, yellows for others. Size: 6 x 10½ in.*

92 vehicles, to the Williamsburg unit where one man working part time handles the maintenance of 10 vehicles.

### Coordinated PM Program

NO MATTER where the truck may be assigned each and every one is routed to one of the company garages for 1000- and 5000-mile lubrication and preventive maintenance checks. We have standardized these inspections in all the garages by means of a series of inspection forms and very thorough instruction and indoctrination of the mechanics. These periodic checks are the heart of our maintenance program, and, believe it or not, we believe in them so thoroughly that we have kept them up

▼ *Fig. 7. Daily gas and oil report is kept by "pump man." Information is later transcribed to temporary forms shown below. Size: 8½ x 11 in.*

DAILY GAS, OIL AND MILEAGE REPORT-AUTOMOBILE

FORM W-91-3

Va. _____ 19 _____

| NO. | MILEAGE | GAL. GAS | QTS. OIL | NO. | MILEAGE | GAL. GAS | QTS. OIL | NO. | MILEAGE | GAL. GAS | QTS. OIL | NO. | MILEAGE | GAL. GAS | QTS. OIL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

FORM 671

| VEHICLE NO. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | OIL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

▲ *Fig. 8. Supt's. monthly gas and oil report (temporary). Size: 8½ x 14 in.*

FORM W-91-1

MONTHLY AUTOMOBILE REPORT

GARAGE _____ MO. 19 _____

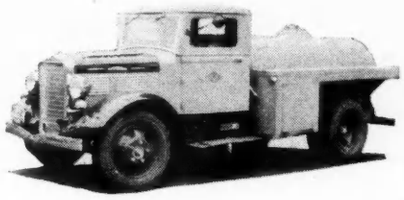
| VEHICLE NO. | GALLONS GASOLINE | QUARTS OIL | ODOMETER READINGS 1ST OF MONTH | ODOMETER READINGS END OF MONTH | MILEAGE | MILES PER GALLONS GASOLINE | MILES PER QUARTS OIL |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

AVERAGE PRICE PER GALLON OF GASOLINE FOR MONTH

AVERAGE PRICE PER QUART OF OIL FOR MONTH

SIGNED _____ SUPERINTENDENT OF EQUIPMENT

▶ *Fig. 9. Monthly mileage report supplies quick-reference performance data. Size: 8½x11 in.*



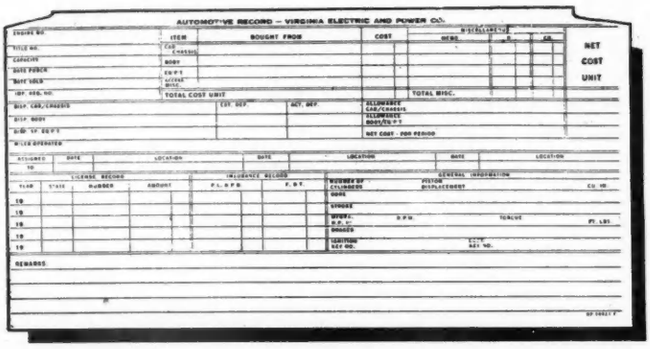
throughout the whole war period with religious accuracy.

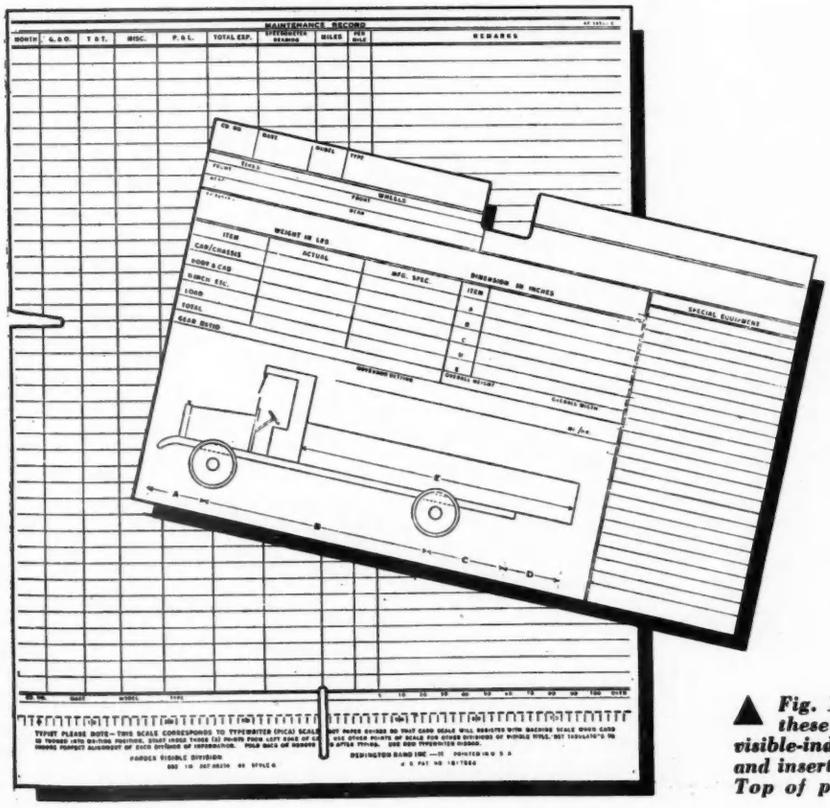
First of the forms is the driver's "Vehicle Trouble Report" (Fig. 1). A pad of these forms is kept at the main door of each shop. Although the driver is not required to complete this form on every trip, he is constantly urged to do so whenever he notices an ailment of the vehicle, and he is required to complete the form, if he makes a complaint of any kind.

The trouble report is examined immediately by the shop foreman and necessary repair is scheduled for either immediate action or at the next regular inspection. For this purpose, a work order form (Fig. 2) is provided which has space for necessary instructions, material used and labor time.

At the 1000-mile inspection, a special form (Fig. 3) is used for recording work accomplished and additional work required. This inspection consists largely of thorough lubrication and inspection, a tire and brake check, and making adjustments and minor repairs.

At the 5000-mile interval another and larger form (Fig. 4) accomplishes the same purpose. This check includes complete engine tune-up, chassis and body tightening, front end check, wheel balancing, etc. At the end of each 1000- or 5000-mile inspection, a small white sticker (Fig. 5) is placed on the dash showing when the next inspection is due.


AUTOMOTIVE RECORD — VIRGINIA ELECTRIC AND POWER CO.


MAINTENANCE RECORD

## 20-Page Booklet is "Bible"

TO ASSURE uniformity and thoroughness of these 1000- and 5000-mile checks, particularly at the outlying shops, Mr. Ray and I prepared a 20-page booklet of "Preventive Maintenance and Inspection Schedules." Lest the reader think that these inspections are conducted on a haphazard basis, there is here reproduced a single page of this booklet pertaining to the tightening operations conducted as a part of the 5000-mile check:

### PREVENTIVE MAINTENANCE

#### Schedule A

#### Tightening

The inspection and tightening of all unit fastenings and frame parts is necessary.

Start at the front of the vehicle and work towards the rear, checking and tightening all nuts and inspecting and noting loose rivets. Loose rivets should be replaced, later, by new ones or body bound bolts.

1. Check radiator mountings. Tighten if necessary.
2. Check engine mountings. Tighten if necessary.
3. Check front spring clips, bolts and nuts. Tighten if necessary.
4. Note broken spring leaves.
5. Check spring shackles and shackle

(TURN TO PAGE 123, PLEASE)

▲ ***Fig. 10. Permanent vehicle records are kept on these forms which fold into standard 8 x 5 in. visible-index file. Statistical data go on front (top) and insert (center); maintenance records on the back. Top of page: Gas main pumper and station wagon***

# WASHINGTON RUNAROUND

**Shortages Slow Production . . . Octane Cuts Probable . . . Battery Outlook Black . . . Vets Pressure for Priority . . . Parts Worry CPA . . . Potshots at Price Ceilings . . . Surplus Sour Notes . . . Congress Capers**

**by GENE HARDY**
**CCJ Washington Bureau**

## Shortages Slow Production

Washington officialdom is still fighting a rearguard action against an ever-widening "economy of scarcity." Regardless of the reasons involved, more and more items are being added to critical lists.

Barely recovered from the effects of the steel strike, the steel producers have been floundering in the throes of the soft coal walkout. Lead and copper are now critical. A coal shortage will affect tire manufacturers. Lumber shortages are bothering truck, trailer and body producers. Strikes, slowdowns, and shutdowns for a variety of reasons in the plants of component suppliers have added to the woes of truck and trailer producers.

In short, the production outlook for most items used by the trucking industry, as viewed from the Nation's Capital, is gloomy.

## Lead Tops Critical List

High on the list of special problems is the critical lead situation—affecting both gasoline and battery output.

First quarter lead allocations for all purposes was 257,000 tons. This was cut to 230,000 tons for the second quarter, but even this allocation is running ahead of the indicated supply for 1946 of 835,000 tons. Demand is estimated at more than 1,300,000 tons. Clearly, further cuts are coming in the third and fourth quarters.

## Octane Cuts Probable

CPA now specifies the amount of tetra-ethyl lead that may be used monthly, and has limited gasoline to 80 octane content. The Ethyl Corp. received an allocation of 3500 tons of metallic lead for the month of April, and 4160 tons for May. On a quarterly basis this provides about 25 per cent less tetra-ethyl fluid than in the first quarter.

The allocation does not guarantee that amount of lead to the industry, but is more in the form of a "hunting license," and it is extremely doubtful that the 80 octane maximum can be met under present allocations. CPA is expected to cut the octane limit even further, perhaps as low as 70 octane. A return to wartime "ping" seems inevitable. It is reported that gasoline being produced under the present 80 octane limit is at best a 78.5 octane product.

With a minimum of 12,000 tons, amounting to only 5 per cent of all metallic lead, the industry says there would be no need for restrictive government controls on gasoline quality or quantity. CPA says there just isn't enough lead available.

## Battery Outlook Black

Battery producers received a second quarter lead allocation amounting to 66,000 tons. While this allocation was not cut from the amount allocated in the first quarter, it represents a decrease in permitted lead usage, as the industry now will be required to hold all uses within that amount—including lead used for military requirements plus increased production for new civilian equipment.

Lead allocations for batteries were previously reduced from 80,900 tons in the fourth quarter of 1945 to the 66,000-ton present limit in the first quarter of this year.

The battery producers find themselves in the same position as the petroleum industry, for the allocation does not guarantee delivery of that amount of lead.

CPA says that enough lead will be allocated to produce 16,250,000 batteries this year, an amount greater than that produced in any prewar year. The industry contends that at least 19,000,000 batteries will be needed to meet minimum demands. But there will be no rationing of batteries despite the fact that replacement batteries will become increasingly difficult to obtain.

## Truck Output Below Estimates

Truck production during March totaled 39,359 units, or 70.2 per cent of manufacturers' forecasts, a gain of 10,667 units over February, but still considerably below the January peak. Average output for March during the years 1937-41 was 82,240 units.

March production was made up of 19,925 lights, 16,990 mediums, 1,690 light-heavies, and 754 heavy-heavies. Of this total 114 light-heavies were for shipment to China, and 11 light-heavies were for military orders. The heavy-heavy output was the smallest for civilian use in any month since April 1945. Only in the light and medium categories did production equal more than 50 per cent of the manufacturers' estimates.

The industry expected to turn out about 95,000 units during April, but adverse factors affecting production will likely hold April output to a maximum of about 75,000 units. The Midland Steel shutdown has resulted in a serious shortage of frame stock. In addition, the problems raised by the coal strike, work stoppages, and inadequate supplies of parts must be solved before manufacturers' schedules can be met. The current industry estimates are not likely to be realized until the last quarter of this year.

Passenger car production during the month was at its postwar peak, amounting to 90,045 automobiles, almost double February output.

## Vets Pressure for Priority

The addition of several new items to the critical materials list means that a few more trucks will be delivered under "CC" ratings. CPA says that there is still no need for concern over a broad system of rationing, since rated orders will only account for a fraction of 1 per cent of total production.

However, pressure for the granting of priorities to veterans for the purchase of new cars and trucks is being exerted on

(TURN TO PAGE 80, PLEASE)


**More than half of the trucks in this fleet has been charged off the books but they are hauling freight efficiently and economically**

# Diesel Fleet's Program for Million-Mile Performance

**"The crucial part of all diesel service is the smooth operation of the injector system. We seldom change or service injectors under one year. At one year, the injector will have given considerably over 100,000 miles of service without attention.**

**"But," as the poet says, "It was not ever thus."**

**"We had plenty of injector trouble to begin with until we began to realize that almost all of our trouble was due to water and dirt in the fuel."**

**by L. M. BIERBRODT**
Maintenance Superintendent, Chief Freight Lines, Kansas City, Mo.

FOR five years we have used diesel engines exclusively. More than half of our fleet has been charged off our depreciation books for more than a year, having done their required half a million miles, yet they are hauling freight every day just as economically and probably with less trouble as the day they first started.

We decided on full diesel operation in 1940, long before Pearl Harbor and gasoline rationing, with the purchase of eight 3-cyl., 371 cu. in. engines. In September, we bought two 4-cyl., 471 cu. in. tractors, and two more in September, 1944. All the original 3-cyl. units are still in operation. Most of them have completed more than 500,000 miles.

### Early Troubles with Pistons

OUR first 3-cyl. units gave us considerable trouble from broken pistons. Bearings, blower and injectors gave us almost no trouble but a unit would run along and then develop a cracked piston head.

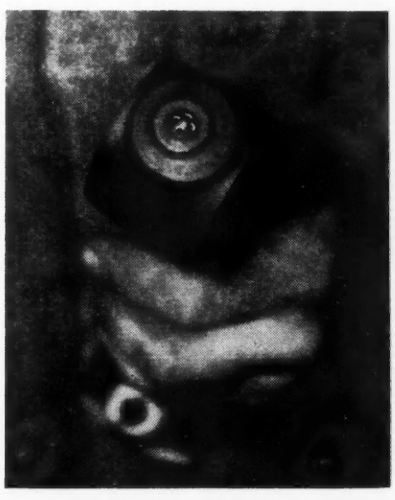
We finally came to the conclusion that the pistons were not being cooled properly. In this engine, the connecting rods are bored and the outlet is the boss above the piston pin. This is bored with several holes, as shown in Fig. 1, and is designed to spray the inside of the piston, particularly the under side of the head, which is ribbed. This is strictly a cooling proposition. The top of a diesel piston is a hot spot because the compression is high enough to ignite the fuel. The fuel burns slowly, comparatively speaking, and furnishes power all the way down the stroke. Thus the heat generated is considerable.

Cooling the piston by spraying oil from the inside is a practical way to keep this heat within controllable limits. But there must be enough oil pressure to spray the top of the piston. We figured that it was not going to the top because of lack of pressure.

Incidentally this brings into consideration a simple fact, often forgotten by maintenance men, that lubricating oil in any kind of an engine has two functions—one is to lubricate and the other is to cool. Oil levels should be kept at full marks during hot summer months to get advantage of the additional cooling capacity.

Our oil pressure in the 3-cyl. engines was running from 15 to 18 lb. A normal top was said to be 25 lb.

(TURN TO PAGE 158, PLEASE)



*Con-rod holes must be clean; oil pressure must send spray to top of piston*

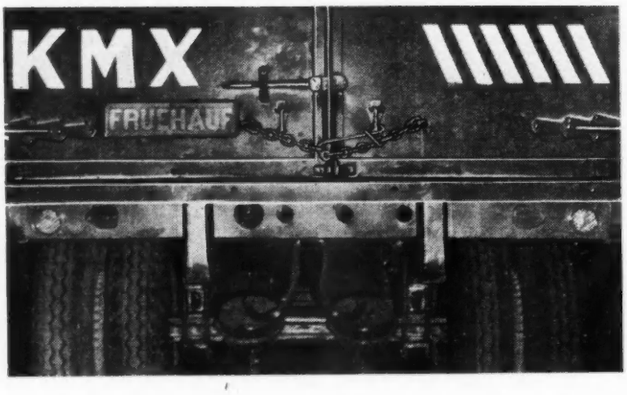
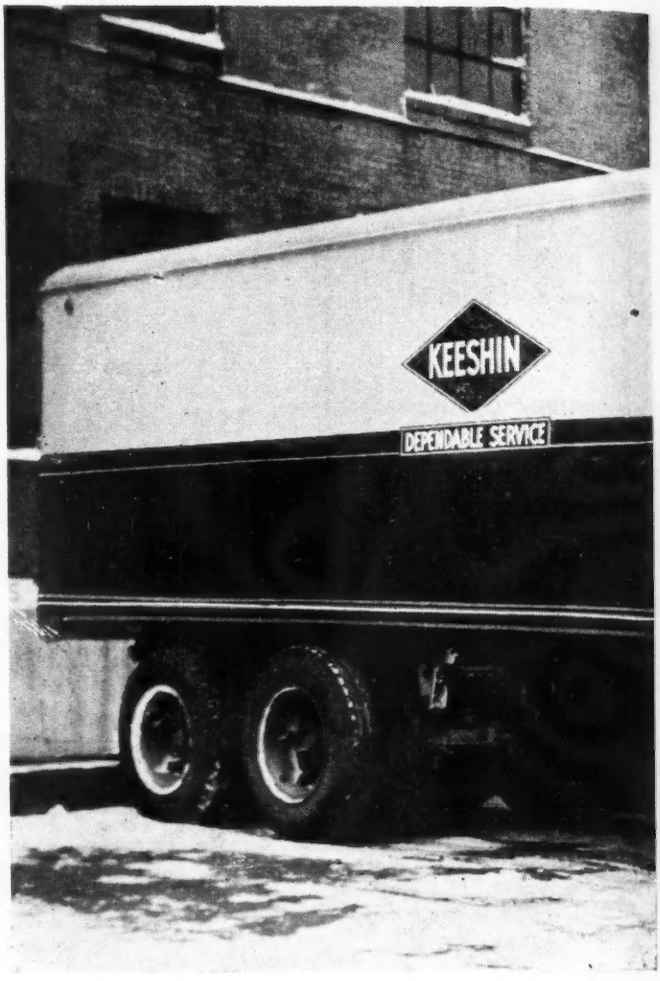



*Fig. 1. Some of the features incorporated in Keeshin postwar trucks and trailers. Large letters and bars are luminous. Short chain is a safeguard against door lock failure and pilferage. Turn lights are shown behind steel bumper*




**NEW EFFICIENCY FEATURES INCORPORATED IN NEW MODELS**

**"As groundwork for the first step in our new postwar operating program, we naturally were obliged first to set up equipment standards. We had to decide what would be the most practicable and procurable "ideal model" in a truck-trailer combination for long-distance operations, and a truck best adaptable for city operations or pickup and delivery work.**

**"As a result, a number of entirely new efficiency features have been incorporated in the new models of tractors, trailers and trucks which we have selected for procurement . . ."**

# Keeshin Sets Postwar Equipment

**With an eye to specialized needs, bodies and parts are being standardized, engine capacities increased. All equipment engineered for lower maintenance**

**by C. W. VAN PATTER**
General Superintendent of Maintenance, Keeshin Freight Lines, Inc., Chicago

FOR more than a year now, our company has been at work on a program to readjust our operations so they will be better adapted to the 16,000 miles of highway routes in 17 different states where we operate. This program is being specifically designed to meet the changes which already exist or are expected in the postwar era.

This readjustment program has consisted in the promotion of two distinct yet closely related plans and activities. The first of these steps will be the change-over, as soon as possible, of all our obsolete over-the-road tractors and city delivery equipment entirely to new rolling stock; or to rebuilt equipment standardized to meet our expected new postwar performance requirements. That is, we hope to achieve the most efficient operating and maintenance methods that are practical for volume handling and transport of motor trucking cargo.

This essentially means that our

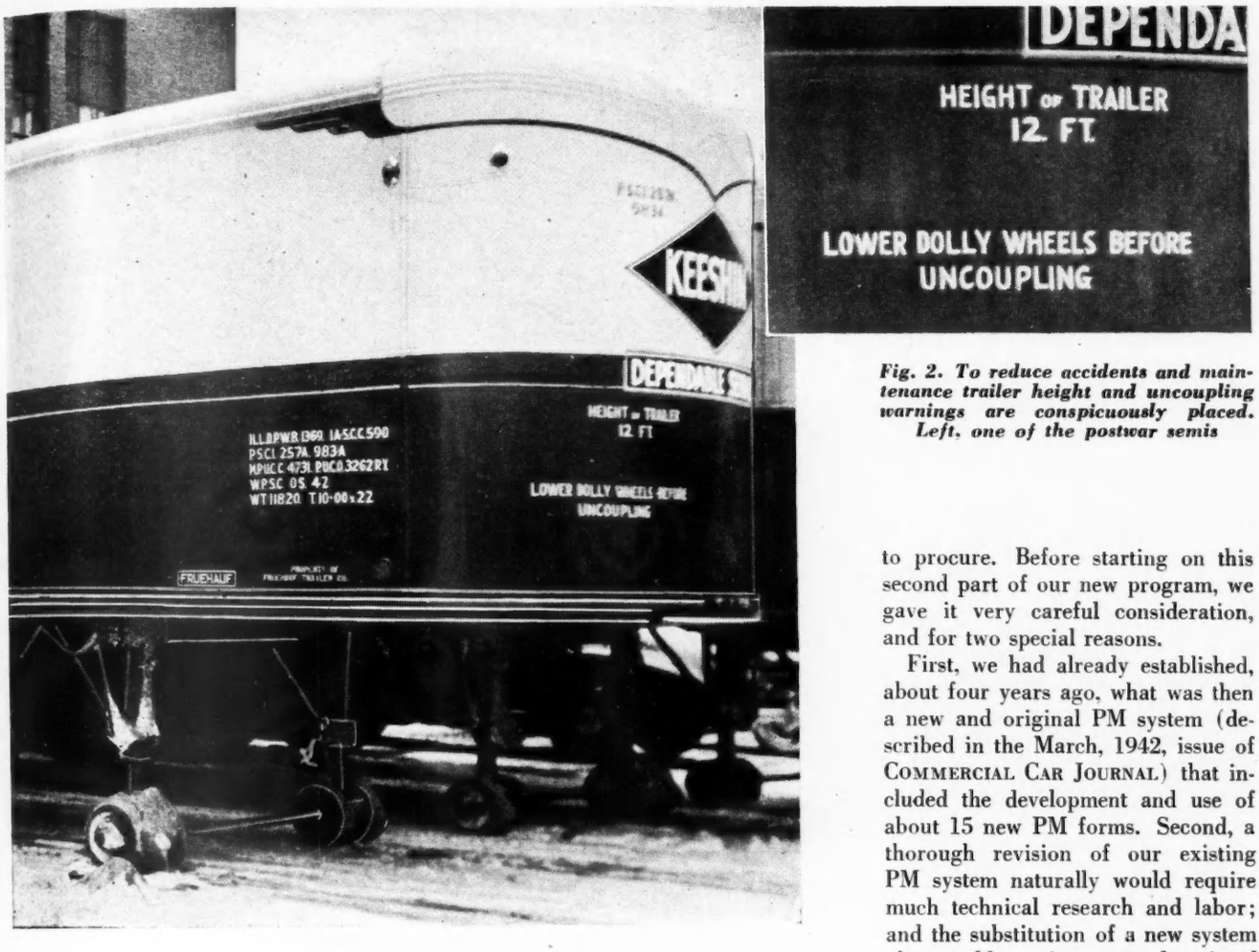



*Fig. 2. To reduce accidents and maintenance trailer height and uncoupling warnings are conspicuously placed. Left, one of the postwar semis*

# Specifications

company decided, at the time of the initiation of this new program, to hold off all postwar replacements of over-the-road tractors and trailers, all city pickup and delivery trucks, also all terminal freight handling equipment, until we can procure the exact standardized types of new equipment which we believe will come nearest to meeting our own specialized trucking needs. The main thought in mind is a more economical operation with better service for customers.

The second follow-up step in our postwar readjustment program in trucking operations is closely related. It consists of a complete revision of our preventive maintenance system, adapting it as specifically as possible to the efficient upkeep of the new postwar tractors, trailers and trucks which we are now beginning to procure. Before starting on this second part of our new program, we gave it very careful consideration, and for two special reasons.

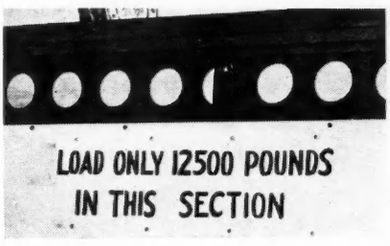



*Fig. 3. To avoid misloading or improper distribution, trailer interiors are divided into sections. Signs are posted as to section weight limits*

First, we had already established, about four years ago, what was then a new and original PM system (described in the March, 1942, issue of COMMERCIAL CAR JOURNAL) that included the development and use of about 15 new PM forms. Second, a thorough revision of our existing PM system naturally would require much technical research and labor; and the substitution of a new system also would require more educational effort in training of supervisors, shop mechanics and truck drivers. However, we are certain that our new PM system, adapted more precisely to our new postwar equipment and operating methods, soon to be put into operation, will be worth all the required costs in shop research and personnel re-education.

### Equipment Standards Set Up

AS GROUNDWORK for the first step in our new postwar operating program—that is, adapting all equipment to our postwar needs in performance efficiency and economy—we naturally were obliged first to set up equipment standards. We had to decide, based on our shop records and years of operating experience, what would be the most practicable and procurable "ideal model" in a truck-trailer train combination for long-distance operations, and a truck best adaptable to city operations or pickup and delivery work.

In this research we were able to

(TURN TO PAGE 105, PLEASE)

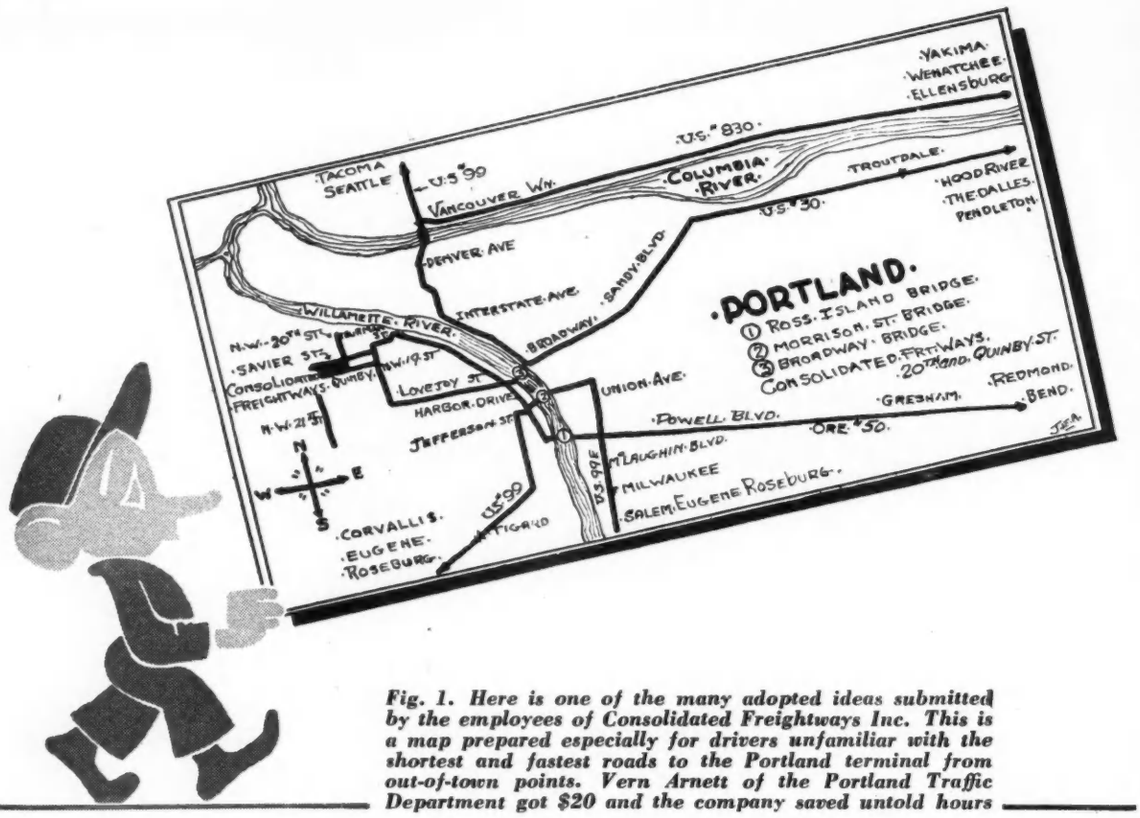



*Fig. 1. Here is one of the many adopted ideas submitted by the employees of Consolidated Freightways Inc. This is a map prepared especially for drivers unfamiliar with the shortest and fastest roads to the Portland terminal from out-of-town points. Vern Arnett of the Portland Traffic Department got $20 and the company saved untold hours*

# "I SUGGEST" . . . . .

# How to Pick Good Ideas Out of "Boxes"

A. C. Howard

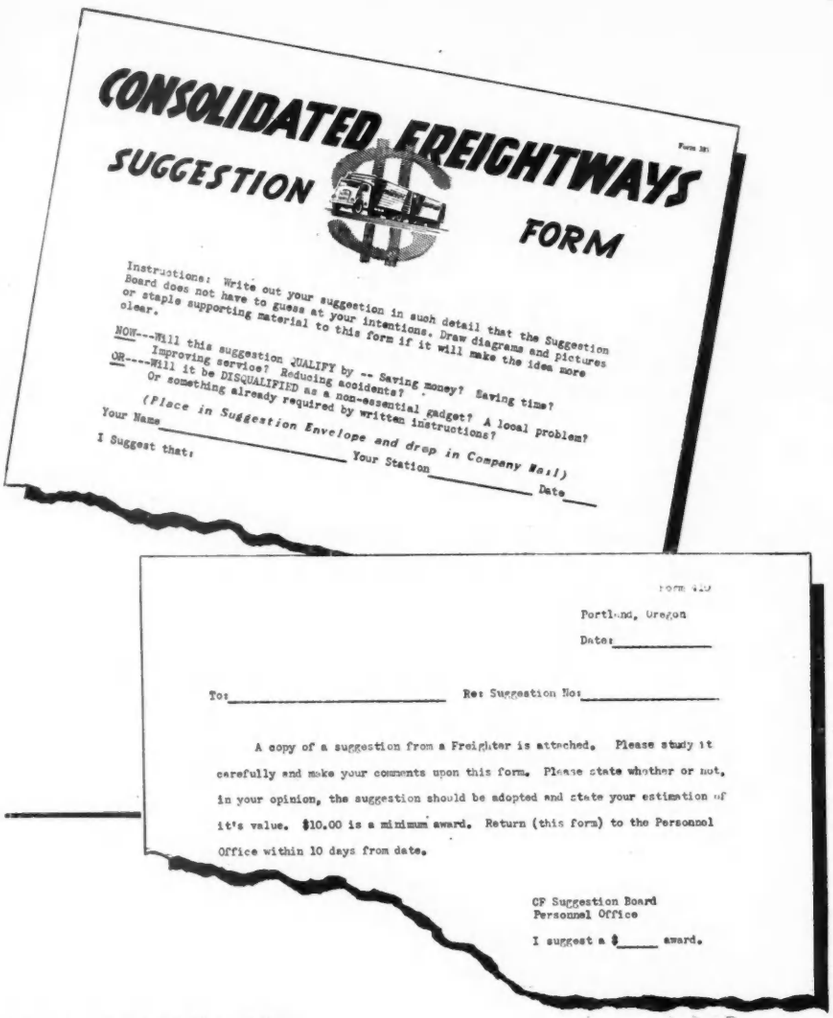
**Cash awards, two simple forms, occasional publicity is all Freightways uses to draw 400 employee ideas annually for improvements in operation and maintenance**

OUR Consolidated Freightways organization has received about 400 suggestions annually during the five years that the Suggestion Box plan has been in effect. We find that the plan has paid excellent dividends in increased interest on the part of our 1800 employees in their work. It has also resulted in our inauguration of many innovations that have helped us to keep in the forefront as one of the largest motor freight companies in the world.

The Suggestion Box idea has been given a lot of special encouragement and impetus in *The Freighter*, our monthly house organ, as well as on our bulletin boards in our various division offices and agencies. We have found that whenever we give the plan this additional publicity that it usually doubles the volume of contributions for a month or two. We discourage Suggestion Box ideas that are purely local in nature. If they pertain only to localized conditions, we wish to have our employees take them up with their own supervisors.

### Suggestions Cover Wide Range

WE HAVE no routine processing jobs such as manufacturing or assembly work, therefore, most of our



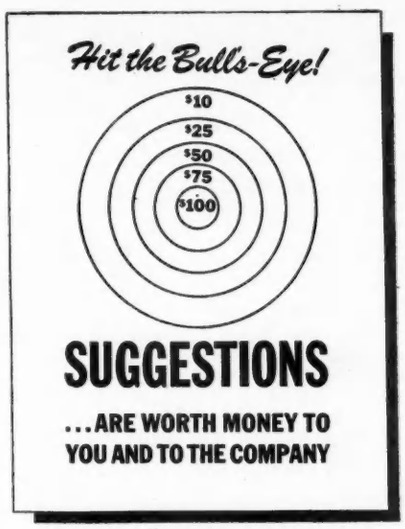
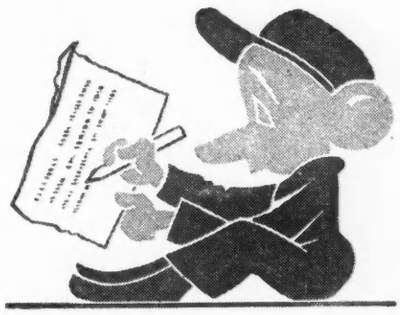




***Fig. 2, left above. Form supplied employees for submitting ideas. Fig. 3, left. Form used for management's approval or rejection of contributions. Fig. 4, above. One of the posters used to stimulate contributions. They get results. All forms shown are 8½x11 in.***



**by A. C. HOWARD**
Personnel Manager, Consolidated Freightways, Inc., Portland, Ore.

### AS FOR VALUE, THE "PROS" PREDOMINATE

**"We have found that the Suggestion Box has been very helpful in building up interest in the company's welfare. The question of whether the value of the suggestion to our company outweighs the expense incurred has been discussed at various times in our management meetings and, so far, the "Pros" predominate.**

**". . . I think that it has helped us materially in building initiative and loyalty in our growing organization."**

suggestions are concerned with the improvement of shipping service or administrative procedure. For example, they deal with such things as better telephone listings, improvements in equipment, accident prevention or sales ideas in reference to blotters, scratch pads and calendars.

Many of the suggestions received call our attention to the fact that some of our employees do not follow instructions already outlined as established procedure in company manuals. Such suggestions are not considered for awards since they merely indicate that the employee does not know his own work thoroughly. We train our people to the limit on the economy of weighing time-cost of training against savings in service administrative improvements.

### Department Heads Consulted

DEPARTMENT heads concerned with the contents of a suggestion advise with our Personnel Department about the adaptability of the idea and suggest the amount of an award. We review the file containing the suggestion and may approve it or we may pass the file on to the vice president for further consideration and a decision upon the exact amount of the award which may run from $10 to $100. The amount paid is based upon its monetary value to the company. We pay out an average of $40

(TURN TO PAGE 148, PLEASE)


# PUBLICATIONS

**USE THE POSTCARD—NO STAMP NEEDED**

**A selected list of the latest in literature—books, pamphlets, catalogs—chosen to help fleet operators solve maintenance and operating problems. Use free postcard.**

### L44. Frame Alignment Manual

Here is an outstanding contribution to the realm of free literature. It is a 16-page manual covering the fundamentals of truck frame straightening. It promises detailed and accurate information on a job well deserving study by every mechanic so that he can recognize a good frame job when it is returned. A study of this manual will enable the foreman or shop mechanic to evaluate the work and may help him to determine how much work is necessary, how much time will be necessary for the job and a general idea of the cost.

The manual covers five major steps in frame alignment. These consist of: (1) straightening the diamond; (2) pulling the diamond; (3) pushing the sag; (4) removing the twist; (5) removing the sidesway. These five steps are given systematic and thorough treatment in the illustrated pages of this book. Photographs and diagrams show details of each procedure and illustrate proper tools for the job.

A copy is available for the writing of L 44 on the free postcard.

### L45. Spark Plug Specifications

A new edition of a manual covering spark plug data has been made available to the fleet field. This 20-page catalog includes specifications for trucks and truck-tractors, passenger cars, commercial engines, industrial equipment and many other types of engines.

In addition, a heat range chart is included as well as a type comparison chart for popular makes of plugs. The final division of the manual consists of a chart giving gap setting for spark plugs and distributor points.

This booklet will be found useful in any shop. A copy may be obtained for the writing of L 45 on the free postcard.

### L46. Data on Rayon Cord

More facts about rayon cord as used in passenger, truck and bus tires have been compiled into a 12-page illustrated booklet now available to the fleet field.

The publication lists as many as seven reasons why rayon cord tires have given better mileages and have been used on army vehicles with great success. In fact, army tests on larger synthetic tires showed rayon 93 per cent better for rough cross-country terrain where bruising and cutting are principal problems, according to the booklet. Army tests also showed rayon to be 330 per cent better on long distance supply work, where heat and sustained operation are principal problems, the author states.

A copy of this booklet is available for the writing of L 46 on the postcard.

### L47. Engine Service Bulletin

The newest edition of an engine service bulletin contains an article on Descaling Engine Blocks which will be interesting to garage superintendents, foremen and others responsible for truck fleet maintenance.

The article describes in concise form an easy method for circulating an inhibited acid type material through one or more dismantled blocks at one time for the effective removal of scale and rust deposits so that maximum engine cooling efficiency is obtained.

The booklet is illustrated and can be read in a short time. Get your copy by writing L 47 on the free postcard.

### L48. Muffler Catalog

Newest edition of the AP Parts Corp. catalog is a 100-page catalog listing mufflers, tail pipes, exhaust pipes and clamps for nearly every make of passenger car and truck. Also included is a table giving interchangeable muffler specifications, muffler specifications by diameter and diesel muffler data.

Write L 48 on the free postcard for a copy of this catalog.

### L49. Brake Lining Catalog

The new 1946 catalog of the Raybestos Division of Raybestos-Manhattan, Inc., includes data and illustrations of all Raybestos products, including listings of brake linings, clutch facings and fan belts. Listings cover all vehicles in the passenger car, truck, and bus fields.

A copy will be sent to anyone writing L 49 on the free postcard.

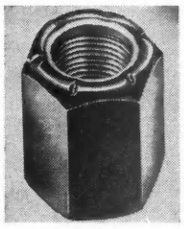
# PRODUCTS


USE THE POSTCARD—NO STAMP NEEDED

**The newest in replacement parts, accessories, shop equipment and supplies. For more details of products described or advertised on these pages, use the accompanying free postcard.**

### P293. U-Bolt Stop Nut

A new self-locking nut, designed especially for automobile leaf spring U-bolts, has been announced by Elastic Stop Nut Corp. of America, Union, N. J.



These nuts, identified by Esna's red elastic collar, are of high strength steel with sufficient thread length to produce bolt loadings up to 70,000 lb. per sq. in. Eight sizes are available, ranging from ⅜ in.-24 up to 1 in.-14.

These and all other Esna elastic stop nuts lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb position setting, and the nuts protect permanently against vibration, corrosion, thread damage, liquid seepage and costly maintenance, according to the manufacturer.

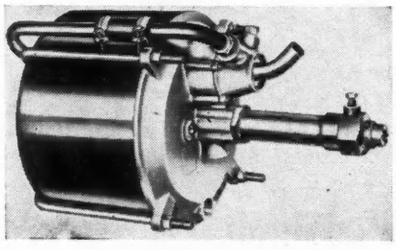
**Use Free Postcard For More Details.**

### P294. Brake Intensifier

A new model of the Bendix Hydrovac, vacuum-hydraulic power braking unit has been announced by Bendix Products Division of Bendix Aviation Corp. Designated as Model C Hydrovac, the new design is available to the service field in six sizes suitable for vehicles ranging from light panel trucks to the largest tandem axle truck and tractor-trailer.

In line with past practice, the vacuum power element is of the cylinder and piston type. On the smaller models, a single-piston cylinder is used; larger models have two vacuum pistons, both mounted upon the same piston rod. This results in twice the power without increasing the diameter of the unit, and thus facilitates installation where limited space is a factor.

Ease of installation is emphasized by the manufacturer, who claims that any mechanic reasonably familiar



with hydraulic brake work can do the job.

**Use Free Postcard For More Details.**

### P295. Portable Shop Carts

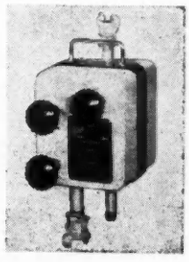
Double utility portable carts developed by Revere Electric Mfg. Co., Chicago, Ill., are equipped with lighting units and provide a handy tray for tools and parts for the mechanic.

A 60-watt Alzak aluminum reflector is mounted to the cart. A brake on one of the casters prevents the cart from shifting or moving while in use.

**Use Free Postcard For More Details.**

### P296. Steam Cleaning Unit

The Turco Hydro Steam Unit developed by Turco Products, Inc., Los Angeles, utilizes the steam supply to give the same powerful cleaning action—heat, water, detergent, and friction—produced by regular steam cleaning plants.



Weighing only 28 lb., the unit is easily portable. Quick couplings permit fast connection. Any steam line maintaining 80 to 150 lb. pressure with a ¾-in. valve outlet is all that is required for connecting the unit.

Three manual controls vary the temperature, quantity of solution and nozzle pressure to handle the needs of the job at hand. It can be adjusted to deliver a high-temperature, penetrating spray or a moderately warm spray. A wide variety of specialized cleaning compounds can be used in this unit.

**Use Free Postcard For More Details.**

### P297. Hydraulic Bumper Jack

Tudor Industries, Inc., Scranton, Pa., has announced its Tic-o-matic 1½-ton Hydraulic Bumper Jack, which is to be followed by a complete line in all capacities from 1½-ton to 5-ton service jacks and 20-ton axle jacks.

The present 1½-ton model is made

(TURN TO NEXT PAGE, PLEASE)

# PRODUCTS


USE THE POSTCARD—NO STAMP NEEDED

(Continued from page 59)

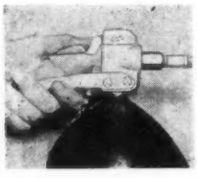
in one piece, is of steel construction and is easily adjustable to fit all bumpers. Its horizontal pump action with 24-in. built-in handle is said to provide positive and easy action.

The built-in release valve which lowers the vehicle is actuated by pulling the handle toward the operator. The jack is said to give long wear because of its precision-built, simplified mechanism.

**Use Free Postcard For More Details.**

### P298. Handy Fire Extinguisher

Randolph Laboratories, Chicago, Ill., has produced a new trigger-touch 15-lb. $CO_2$ fire extinguisher that is carried and operated with uninterrupted, single-sweep action.



Grasping the unit by its arched-steel handle, the user removes the extinguisher from its bracket, carries it with one hand. The other arm is free to remove obstacles and open doors while en route to the scene of action.

One touch of the thumb-trigger discharges a penetrating, snowy blanket of carbon dioxide gas . . smothers an 8-qt. gasoline fire in 9 sec. under official Underwriters' Laboratories fire tests. Release of the trigger automatically stops the flow, saves the remainder of the charge.

**Use Free Postcard For More Details.**

### P299. Fast Battery Charger

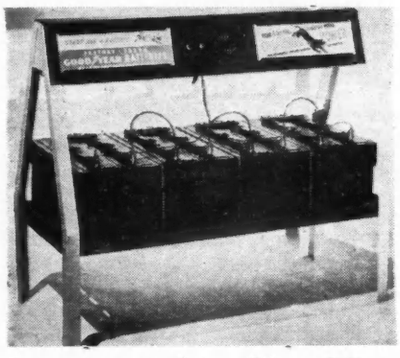
The Electric Heat Control Co., Cleveland, Ohio, announces a new "King" Fast Battery Charger, type FC-4, now available to the industry. This charger is equipped with two meters; one indicates the ampere charging rate, and the other indicates the condition of the battery and state of charge. This two-meter method is said to simplify the mechanism and to provide accurate readings at a glance, without manipulating switches.

The instrument panel is on top of the cabinet so that there is no stooping to read the meter or adjust controls. A cover is provided to protect the instrument panel when not in use.

**Use Free Postcard For More Details.**

### P300. Multiple Battery Stand

Announcement of a device known as the truck battery PowR SavR, a unit designed to maintain battery charge, is made by The Goodyear Tire & Rubber Co. This rack is said to insure convenience and efficiency for truckers and fleet operators in



that it answers the problem of keeping spare batteries on hand and at peak efficiency, without deterioration from sulphation.

The truck PowR SavR provides trickle-charge maintenance, keeps batteries factory fresh. The rack is designed to carry four 12-volt batteries or eight 6-volt batteries, sufficient stock for the operator with a fleet of 25 trucks. Batteries carried on this system eliminates time-consuming care and expensive delays through failure to provide that care.

**Use Free Postcard For More Details.**

### P301. Flexible Tubing

A new type of flexible tubing, non-collapsible under plus or minus pressures and retractable to about 1/8 its extended length, is announced by The Warner Brothers Co., Spiratube Division, Bridgeport, Conn., for portable or semi-permanent ventilation or any handling of air, gases or light solids.

A feature of the Spiratube construction is the method of spiral-stitching the spring core within the fabric. The inside surface is free of wire ridges, providing far less resistance to air flow and no obstruction to the passage of solids. Sharp bends can be made with only slight reduction of air flow and without the use of elbows or special fittings, according to the manufacturer.

Spiratube is considerably lighter than metal duct or molded tubing,

and takes up less space when retracted. The standard tubing is made of long-fibre duck, having a bursting strength of 170 p.s.i. The fabric is processed fire-resistant and covered with tough, durable thermoplastic.

The tubing is furnished in standard diameters from 3 to 16 in., and in lengths of 10, 15 and 25 ft. Built-in couplings permit quick joining or disconnecting.

**Use Free Postcard For More Details.**

### P302. Washing Agent

Ethyl Corp. announces a new multi-purpose car wash known as Ethyl Cleaner. The cleaner is a synthetic detergent derived from petroleum and free of animal and vegetable fats, greases or acid. It is non-inflammable.

This new product not only removes dirt, grease and "road film" from the vehicle's body, but is said to be equally effective on windshields, windows, upholstery, chrome fixtures, tires and any canvas top.

It is being offered in concentrated liquid form, making it an economical product to use. For instance, the 24-oz. bottle, retailing at $1.00, produces about 120 qt. of cleaning solution when water is added to it.

**Use Free Postcard For More Details.**

### P303. Liquid Insulator

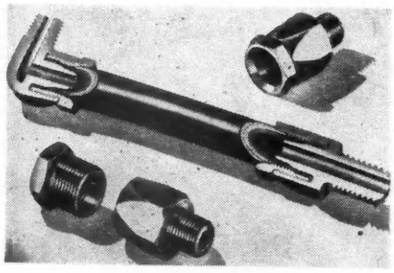
A new liquid insulator for the protection of electrical systems has been placed on the market by the Lumanize Products Co., Chicago, Ill. This liquid has a high dielectric strength and resistance against moisture, heat, acids and oils, according to the manufacturer. It is said to retain these properties for long periods of time, to reduce radio interferences and to insure better starting and ignition performance.

The solution is applied in two coats and should be applied twice a year for best results.

**Use Free Postcard For More Details.**

### P304. Reusable Hose Couplings

Announcement is made by Resistoflex Corp., Belleville, N. J., of a complete line of patented attachable-detachable reusable metal couplings, which now make it possible to hand-assemble flexible hose lines. These two-piece safety-seal couplings will never let go or vibrate loose, the manufacturer states. They are easily and quickly attached or detached and can be used over and over again, with end-wrench assembly done on the spot.



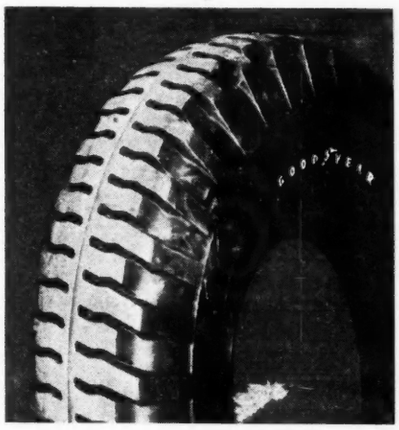
The coupling nut threads onto the hose, with coupling shell compressing the hose end into a safety-seal gasket. With keep-true threads, the fitting has a long, even grip on the hose, the double bell shape of nut allowing hose to flex without cutting. The heavy body of the fitting prevents crushing or distorting of the line. Unusually large square wrench surfaces make assembly operation simple and quick.

**Use Free Postcard For More Details.**

### P305. Special Tread Tire

A new type truck tire with special tread design to meet needs of vehicles that operate both on and off the highway has been put into production by The Goodyear Tire and Rubber Co.

The new tire, known as the Hi-Way Lug, has a deep, non-skid and extra heavy tread plus strength in the rayon cord body to provide the cut and bruise protection as well as traction and wearing qualities needed for the type of punishment taken by tires in logging, gravel operating and coal mining, according to the company.




The lugs are placed close together for smooth-rolling and long, even tread wear. The alternate long and short bars provide extra traction when "in the rough." Specially compounded rubber toughens the tires against road shock and guards against separation and blowouts. Construction provides effective resistance to cutting, snagging and bruising.

Rayon cord is used in the construction. First tires will be made available in the three sizes of 9.00, 10.00 and 11.00-20.

**Use Free Postcard For More Details.**

### P306. Unified Ignition System

"Uni-Power," a new single-unit battery ignition system, has been developed for the automotive field by the LaPointe-Plascomold Corp., Unionville, Conn. This unified system consisting of a coil, condenser and distributor, has been combined in a molded plastic case with high dielectric properties. The complete unit weighs about 2½ lb.

The device features a centrifugal spark advance with positive, accurate spark control which is claimed to provide maximum ignition performance. An aluminum cover protects against dust and moisture and provides radio shielding. Spark plug leads enter from the bottom of the housing. A neon light in the rotor arm indicates ignition performance.

This new unit is said to be designed so as to avoid complications and delays in disassembly, reassembly and parts replacements. Installation requires no changes in the existing electrical system of the engine.

**Use Free Postcard For More Details.**

### P307. Engine Cleaners

Development of a new product called Stano-Purge for cleaning crankcases and lubrication systems of engines and another new product named Stano-Vim for purging fuel burning systems of gasoline engines is announced by Standard Oil Co. of Indiana.

Stano-Purge is designed to remove loose crankcase sludge and clean oil screens and passages. Its function is to remove varnish, gum, and carbon deposits from valve stems, manifold, and intake valve parts, remove combustion chamber deposits, and clean fouled spark plugs.

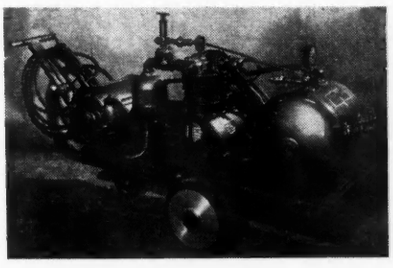
**Use Free Postcard For More Details.**

### P308. Tire Inflator

The Radiator Specialty Co. announces a new automotive product, the "Tire-Flator," a 12-ft. length of rubber tubing with specially constructed metal ends that fit all tire valves.

The "Tire-Flator" works automatically. One end is attached to the flat and the other to the spare or any other tire, and no further effort is required. The full tire inflates the flat, automatically equalizing the pressure in both tires.

**Use Free Postcard For More Details.**



**This portable air compressor, built by the Kellogg Division of the American Brakeshoe Co., rolls on "air weight" aluminum wheels, a new development of Northrop Gaines, Inc., a wholly-owned subsidiary of Northrop Aircraft, Inc. The wheels, sand cast of aluminum and equipped with molded rubber tires, are fitted with Timken tapered roller bearings which require no lubrication during the life of the wheel**

*This bright, clean shop of Howard Sober, Inc., was planned for cleanliness before construction. Cleanliness steps up production, attracts men, increases efficiency*

# Planned Cleanliness Pays Off in Increased Efficiency

**Howard Sober**

IT IS just as easy and costs no more to keep a clean shop clean than to keep a dirty shop clean. That is the principle we operate on, not only in our service shops, but also in our dispatch offices, bunk rooms, and other installations. We are firmly convinced that such a policy pays off in increased efficiency and improved labor relations. After 25 years in the trucking business, we know that anything that makes for clean, attractive and convenient working conditions will attract and help us keep the type of employe we want in our organization.

While it is possible to have clean working conditions in any shop if you really are determined to have them, it is much easier to do the job if the shop is designed with that objective in mind. Before we built our present terminal at Lansing five years ago, we were determined to have the very best in the way of light, clean service facilities.

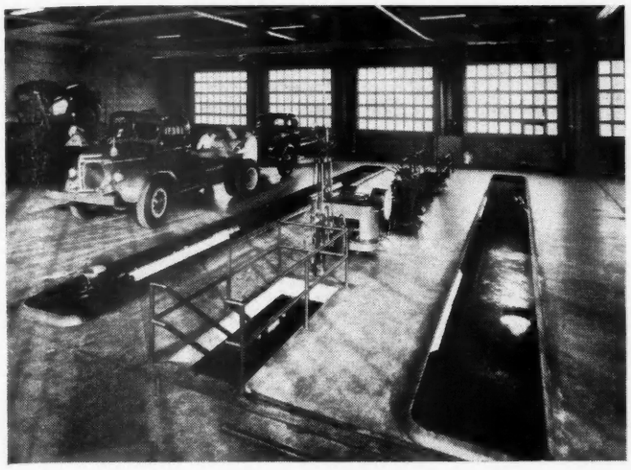
We surveyed every possible installation to get the best ideas available for a practical, convenient, comfortable, clean shop, and then turned these over to our architect for incorporation into our building plans. The results have been so satisfactory that today, after five years of operation, there is very little we would change if we had to do it again.

### Constant Attention Needed

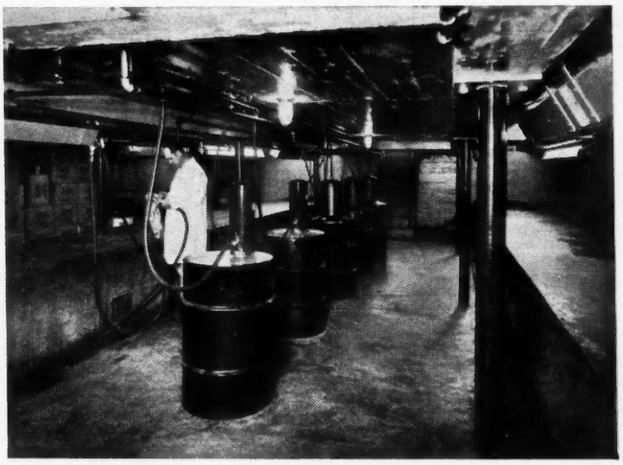
WE HAVE discovered, too, that while proper facilities for maintaining cleanliness are all important, the only way to insure success is to keep on top of the job every minute. We don't leave it solely up to the men in the shop to keep their house in order, but every executive from the president on down is schooled to watch for laxity and to call it to the attention of either the shop superintendent or the men themselves. The mechanics are required to clean up around each job after it is finished in order not to overburden our regular janitors. One of the requirements is to mop up all oil or grease spots with an oleum soap solution.

### Two Full-Time Janitors

WE EMPLOY two full-time janitors and one part-time man and stagger their hours to meet our needs. Floors are mopped regularly twice a week with a proprietary liquid soap solution that does not form a suds.



*Grease pits or the equipment in the islands need not be greasy. Area is mopped periodically with solvent solutions*



*Working conditions down in the pits are as clean as anywhere in the shop. Forced ventilation carries off fumes*

## Proper planning before construction, and a regular cleaning schedule after, improves maintenance efficiency and labor relations

**by HOWARD SOBER**
President, Howard Sober, Inc., Lansing, Mich.

*Below: A view of the parts room. Notice spotless floor and orderly bins*

### COSTS NO MORE THAN SPORADIC SCRUBBINGS

**"Cleanliness in the shops and other installations is a religion with our entire staff. Floors are kept scrubbed so clean that you almost can eat off them. And V. J. Padgett, our general manager, says that it costs no more to keep the shop clean on a regular schedule than to let it get dirty and then to have to work ten times as hard to pry the grease and dirt loose."**

In addition, we go over all floors once a month with a solution of one gallon of grease and oil solvent to four gallons of spirits of oleum. We like this cleaner because it dries faster than kerosene and leaves no odor. This is followed up with a thorough mopping with liquid soap.

One important point in keeping floors clean is the character of the material used in the floor. Our shop has a Gibralter floor, which is hard-surfaced and non-absorbent. By keeping the shop floor clean, we also are able to keep our business offices cleaner, because we do not track grease and dirt into them after coming in from the shop.

Because we wanted to have as much light as possible in our shop, we have a large window area along one side and windows in the service doors to clean. We not follow any regular schedule on these, but wash them, along with walls and other parts of the building, whenever they need it. Our whole cleanliness program is not very involved, but is merely a matter of constant vigilance to wipe out the dirt before it gets a chance to stick.

(TURN TO NEXT PAGE, PLEASE)

# Planned Cleanliness . . .

(Continued from page 63)

### Forced Air Ventilation

Another aspect of cleanliness is elimination of fumes, which are a natural element of garage work. To accomplish this, we have installed a system of ventilation and forced air ducts to carry off vapors as soon as they develop. Alongside each repair stall, for instance, there is an outlet which attaches through a flexible tube to the exhaust system of the engine. Our grease pits below floor level are equipped with hollow islands, fitted with grilles at the bottom, which carry off any fumes which may accumulate in the pit. In addition, there are overhead exhaust fans which connect into the flue system.

### Shop is Orderly

STILL another phase of our program deals with order in the shop. We believe in the principle of "a place for everything and everything in its place." It not only is unsightly to have tools scattered hit-or-miss over workbenches and floors, but it also is inefficient. It also may lead to loss of tools or argument among the mechanics over ownership of unmarked tools. Each of our mechanics has his own portable tool cabinet containing ample room for all his equipment and we insist that he keep his tools in it. As a result, workbenches are kept clean except for the particular tools being used on the job.

In order to keep the service shop proper as unlittered as possible, we have segregated the machine shop into one room by itself. Here we have all of the bulky equipment, such as riveting machines, valve refacing and grinding equipment, and similar installations.

### Only Clean Trucks Enter Shop

ANOTHER factor helping to keep the shop clean is our steam cleaning room, where we can wash and degrease our trucks before running them into the shop for repair. This not only avoids carrying mud and grease into the garage, but makes it much more pleasant for the repairmen.

We have attempted to reduce manual handling of greases and oils, with their attendant slopping, to a minimum in our grease pits. Waste oils and greases drained from our trucks flow by gravity through drainage pipes to an outside receptacle where they can be salvaged for reclaiming or other disposal. Lubricants for refilling are maintained in barrels under the aisles between the pits, from which they can be pumped into the truck.

### Modern Facilities for Personnel

OUR mechanics are provided with the most modern facilities for personal cleanliness. Their washrooms contain individual lockers and washing and shower facilities. They can come to work dressed like bankers if they choose, and leave looking the same way.

We carry the idea of cleanliness and order into our dispatch offices and bunk houses also. We maintain rest quarters for our drivers and insist that they keep them clean at all times. In addition to bunks where the drivers can sleep or rest between runs, we provide lockers for clothes and complete washroom and shower facilities. The only cost to the men is a 25-cent charge for laundry of linens.

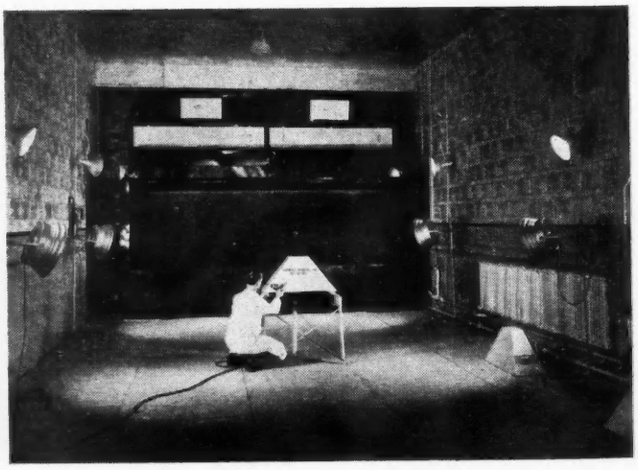
Howard Sober, Inc., was one of the pioneers in truck haulaway delivery of new motor cars from manufacturer to dealer. From a modest start 25 years ago, the company has grown consistently, until today it comprises an operation involving more than 600 employes. Its business now is divided about equally between truck delivery of new motor cars and driveaway service on new commercial vehicles. In 1941, the last full year of automotive manufacture, the company delivered about 60,000 new cars and the same number of new trucks. Its fleet mileage that year was in excess of eight million miles. It operated more than 60 trucks before the war, and this figure is expected to increase to between 75 and 100 in the next year.

During the war, when new cars were not being built, the company

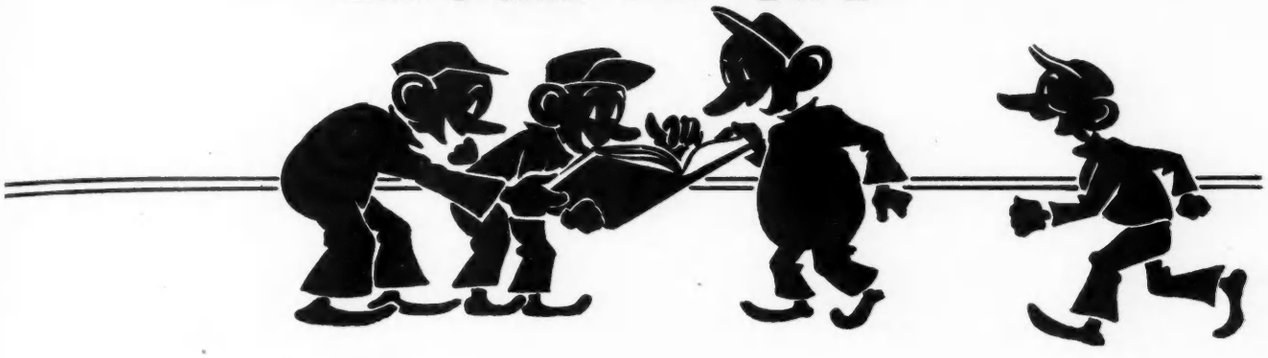
(TURN TO PAGE 214, PLEASE)

*The floor of the machine shop is kept spotless at all times*

*Sober's paint shop is modern, clean and well ventilated*



# LAUGH IT OFF



According to one of our country commuting warehouse employees, the farmers in his section are saying that of all the farm machinery of various kinds they buy, the manure spreader is the only one the salesmen aren't willing to stand behind.

C C J

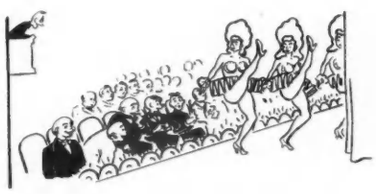
***From a news despatch, we note that stores will get nylon shaving brushes soon. If papa gets his nylon brushes before mama gets her supply of nylon hosiery, look out for trouble.***

C C J

"How did you learn to kiss like that?" she asked in ecstatic tones.

And promptly he replied: "Siphoning gas, my dear."

C C J



**Road Driver: "My girl has been a chorus girl in New York City for two years."**

**City Driver: "What shows?"**

**Road Driver: "Practically everything!"**

C C J

Prosaic Piffle

Pause that refreshed . . .

Pause for station identification . . .

Pause for emphasis . . .

Pause for a rest . . .

Paw's drunk again.

C C J

*Supervisor of Drivers: "Where did you get that blonde the road checker reported you transported last night?"*

*Driver: "I don't know, boss. I just opened my cab door and there she was."*

C C J

Definition of a modern girl: Legs by Steinway, body by Fisher, and necks by the hour.

C C J

***Overheard while passing thru the shop: "My wife has run away with my best friend—and I miss him."***

Why be so conservative? Consider the turtle—he makes no progress unless he sticks his neck out.

C C J

A candid comment by one of our returned veterans: "During my three years overseas I had many exciting and interesting experiences—most of them true."

C C J

Young wife to ardent G. I., rushing into the house after an absence of six months: "Remember what I wrote you about Mary Smith, dear. Her husband broke three of her ribs when he returned from a three weeks' trip to the Pacific Coast on a moving van. Please, Jack, count to ten!"

C C J

**All animals had left the ark except two snakes lying over in a corner. "Why don't you go forth and multiply?" asked Noah. "We can't," answered one. "We're adders!"**

C C J

**"This should interest you, Mr. Morgan. It WAS the spark plugs!"**

In checking over insurance applications of newly employed drivers, we came across one who had shown his wife as beneficiary, but in the space headed, "Relationship to you," he had written in the word: "Nice."

C C J

***Boss: "You should have been here at eight o'clock."***

***Tardy Employee: "Why? What happened?"***

C C J

**A bargain is a good buy. A good-bye is a farewell. A farewell is to part. To part is to leave. My boyfriend left me without a good-bye. He was no bargain, anyway.**

C C J

I call my girl "M. P." because she's always checking my passes.

C C J

Pointing to a gentleman standing on the rostrum in the company's meeting room, the small son of the refrigerator fleet operator asked, "Who is that man?"

"That is our chaplain," replied his father.

"Does he pray for our employees?" the son inquired.

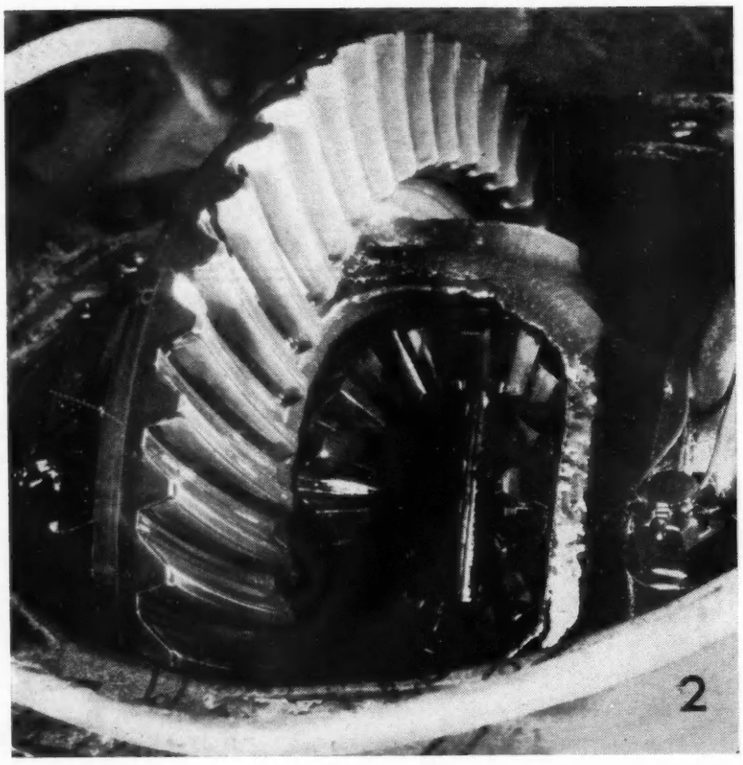
Hesitating a moment, the father said: "Yes, he does most of the time, son, but occasionally, when he examines our maintenance cost figures, he prays for the company."

C C J

**Personnel Director: "Have you any references?"**

**Applicant for freight handling job: "Sure. Here's the letter"—"To whom it may concern: Percy Hemmingway worked for us one week and we're satisfied."**

**(Resume Work)**




*This differential shows a clean condition after running 15,000 miles, lubricated with a sulphur-chlorine oil*

EYEING THE FUTURE

# Warborn Greases Set New Ideals of Performance

**High torque at low speed and high-speed shock are two principal conditions that set trouble-free performance standards**

**by PHILIP RUSKIN**

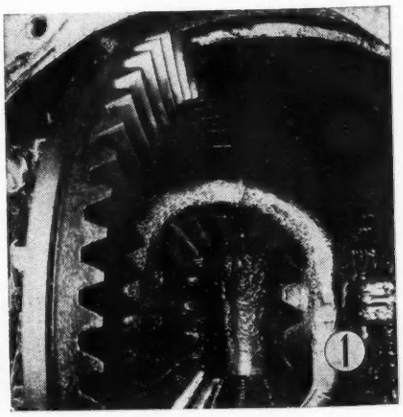
DURING the war, the Society of Automotive Engineers and the American Petroleum Institute were called upon to recruit the services of all available fuels and lubricants experts in an all-out drive to develop products capable of meeting the rigorous conditions of the battlefield. The work of the SAE and API was coordinated under a newly-formed organization known as the Coordinating Research Council, or the CRC. Many important developments resulted.

With the end of the war, it was decided to release the findings of more than 300 separate fuels and lubricants projects conducted under the sponsorship of the CRC. An initial effort in this direction was a symposium recently held in New York City by the Metropolitan Section of the SAE. Brought to light were many new tests and standards for engine oil detergency, stability and bearing corrosion, and severe high and low temperature conditions.

Similarly, the problem of developing a suitable universal gear oil for Army use followed close behind the

(TURN TO PAGE 69, PLEASE)

*Compare this differential with the one above. Sludgy condition is revealed after 10,000 miles with a lead soap oil*




**"For the technically minded, the new gear oil will probably contain fatty oil plus various combinations of sulphur, chlorine, phosphorus or lead soap. It will have to include a delicately-balanced mixture of a highly-active anti-weld agent and a less reactive film strength or surface-active agent to pass both high speed and high torque requirements."**

## WARBORN GREASES

(CONTINUED FROM PAGE 66)

engine oil headache. Early additive-type gear oils containing a lead soap-active sulphur ingredient provided fair protection for heavily-loaded gears but had poor oxidation stability, caused high bearing wear and corroded bronze parts.

### Sulphur-Chlorine Type

LATER research provided sulphur-chlorine additives which provided improved stability and lubricating properties. A study of Figs. 7 and 8 reveals clearly the superiority of sulphur-chlorine additives over those of the lead soap-active sulphur type. Compare the sludgy condition of the lead soap type of lubrication in Fig. 7 (10,000 miles) with the clean condition of the differential in Fig. 8 (15,000 miles) lubricated by a sulphur-chlorine type of gear oil.

Up to an operating temperature of 225 deg. Fahr., the sulphur-chlorine type gear oil proved fairly satisfactory. However, above that temperature, even this better type gear oil tends to be unstable and corrosive, and, under certain service conditions, is unable to prevent excessive wear.

The U. S. Army adopted the sulphur-chlorine type of gear oil just prior to the war under the specification of 2-105. This lubricant was listed as an all-purpose gear oil for all differential units (hypoid or otherwise), for transmissions and for general use where gear oils are required, with the provision that it be specified for operating temperatures up to 250 deg. Fahr., only. It was realized that this lubricant had serious limitations and so the problem of finding a better all-purpose, or universal, gear oil was turned over to the CRC for study and final recommendations.

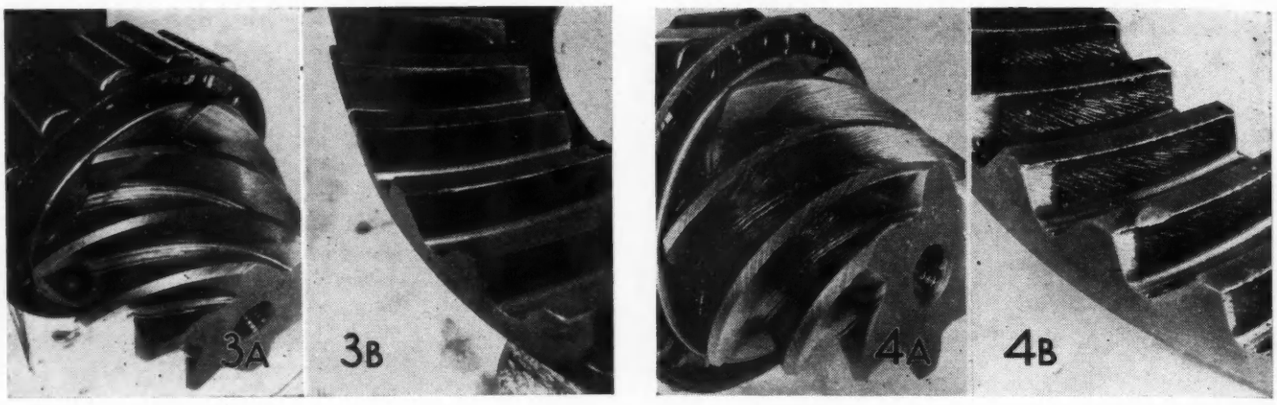
P. V. Keyser, Jr., director of the Research and Development Laboratories of Socony-Vacuum, who has been in charge of the gear oil work for the CRC, tells us that good progress has been made in improving gear oil specifications. He emphasizes, however, that the new specifications, to be known as Army 2-105B, do not specifically state the exact materials to be added to mineral gear oils to provide the required all-purpose gear oil. Instead, a series of simulated service tests have been established which a given gear oil must pass to qualify. This is to allow a variety of additive materials to be used by enterprising gear oil manufacturers; previously, under 2-105, they had been limited to sulphur-chlorine, which was recognized as one of the serious objections to this latter specification. In effect, the new specifications, describe a satisfactory gear oil in terms of actual performance rather than on arbitrary bench tests and chemical composition.

### The New Specifications

TWO principal conditions of operation were recognized as requiring special attention in the new specifications: High torque at low speed, and high-speed shock. A high torque test measures the ability of the gear oil to protect gearing under conditions which would be encountered in heavy-duty truck service over mountainous terrain, for example; which the high-speed test is self-explanatory.

Investigation showed that a gear

(TURN TO NEXT PAGE, PLEASE)






## WARBORN GREASES

(CONTINUED FROM PAGE 69)

oil of the sulphur-chlorine type (2-105), favors the high speed phase but falls down on high torque and low speed performance quite generally. It is significant, also, that additives that will protect gearing at high speed will not necessarily protect under high torque and low speed; in fact, it has been found that additives which help under high speed actually do harm at high torque and low speed. This fact was not generally known prior to the wartime CRC tests, and may provide the answer to many mystifying gear failures.

Fig. 3 shows conditions of a ring gear (B) and a pinion (A) after a high torque test with a gear oil that is rated "pass" on the basis of actual inspection of the parts after the test. Compare this result with that shown in Fig. 4. which represents a ring gear (B) and pinion (A) lubricated with 2-105 gear oil. Note wear on teeth and deposits. Figs. 5 to 7 illustrate how results are graded on the high-speed test. Fig. 5 rates a "pass"; Fig. 6, is a borderline case; and Fig. 7 is failure. Other factors investigated during the simulated tests include: Foaming; ferrous metal protection in the presence of water; channeling; chemical activity toward copper; moisture corrosion; and storage solubility.

### Available Within 6 Months

ACCORDING to the best information, gear oils conforming to the requirements of the simulated tests established by the CRC will be available for commercial use within 6 months, which should be happy news

(TURN TO PAGE 154, PLEASE)


# OPERATING COSTS REDUCED-

## On Toughest Hauling by 3 MAJOR STRUCTURAL IMPROVEMENTS

The greatest and most *enduring* strength for its weight-ratio known in trailer engineering is now attributed to Trailmobile's new corrugated van, with its "big-post" construction of new and greatly improved corrugated sides. It is for jobs too extremely severe for even Trailmobiles *great* new-type LP smooth-panelled van.

A "folding back" and spot-welding through the fold all along *both top and bottom, doubles* the thickness of these steel corrugated sides throughout their most vital areas, creating *4 times their usual strength!* And a *double-ribbed* rub-rail at the top, *identical* to that below, *doubles* the strength against impacts and prevents most body damage.

This trailer's under-structure is the famed new "distributing-beam" type, that "spreads" all load-stress, preventing stress-concentration. And its under-carriage is the finest—Trailmobile's *standard* suspension—*proclaimed* the "easiest to pull," and now still *further* improved!

In addition, special asphalting eliminates localized rusting. Lights are recessed behind protruding corrugations. Wiring is in conduit, with "tap-offs." Side doors are available. Also, a special separate "outside" tail-gate, and a full-width wood-filled steel-jacketed bumper.

Its redesign permits more head-room for loading all the way to the front. And its new "flatter" corrugation gives signs on the sides unusually excellent visibility.

Throughout, this trailer has been engineered to cut the cost of upkeep for even the toughest terminal hauling. For instance, damaged panels are "torched out," new ones welded back in, lock-strip replaced!

*See* this corrugated Model-CP as well as the LP, at your nearby Trailmobile Branch. Or, ACCEPT from us, without obligation, complete literature FREE.

•

THE TRAILMOBILE COMPANY
Cincinnati 9, Ohio

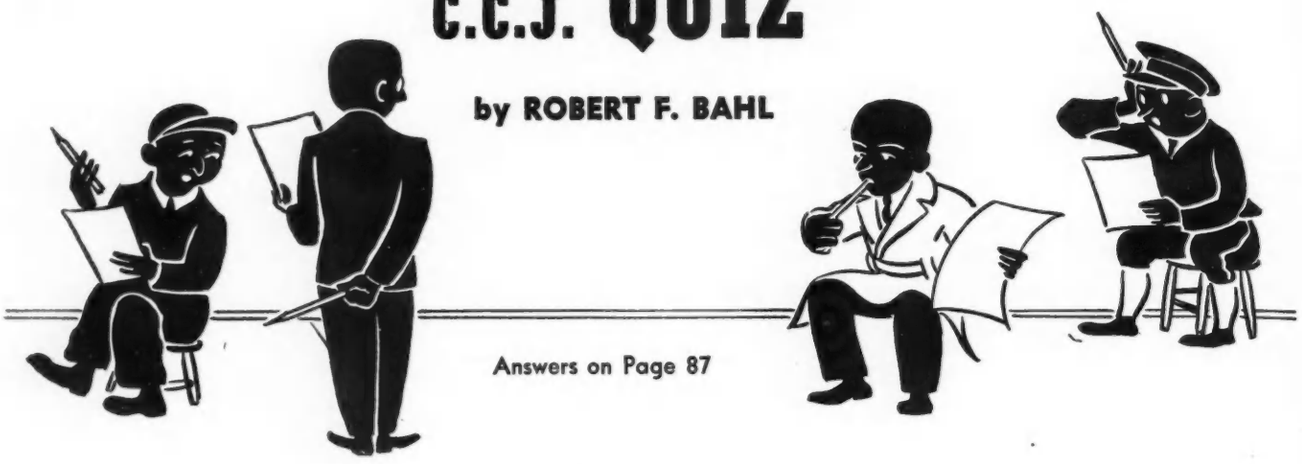
TRAILMOBILE

*Protecting its 105 Year Reputation*

—71 "Homefolks" Service Centers

# C.C.J. QUIZ

by ROBERT F. BAHL



Answers on Page 87

Here 's a quiz about men—big men—in automotive history, who practically lifted themselves up by their own bootstraps. You'll find the quiz even more interesting if you score yourself, counting 10 points for each correct answer—100 is perfect; 90, excellent; 80, good; 70, fair. Answers are on page 87.

**1.**

He was only a five-cents-an-hour engine wiper in a railroad shop at Ellis, Kan. . . . but today you will find his name on thousands of automobiles all over the country. He is . . .

a. David Buick
b. Walter Chrysler
c. J. W. Packard
d. John N. Willys

**2.**

From farm boy to multi-millionaire—Henry Ford was born and raised on a farm located within sight of the smokestacks of his plant at . . .

a. Highland Park
b. River Rouge
c. Willow Run
d. Windsor


**3.**

Not content to follow his father's trade of shoemaker in Canajoharie, N. Y., at the age of 12 he got a job as delivery boy in a Utica Department Store. He is none other than

a. Joseph W. Frazer
b. Harvey S. Firestone
c. Henry J. Kaiser
d. Horace Dodge

**4.**

Most folks know that William S. Knudsen is an immigrant to this country, but do you know that he came from . . .

a. Denmark
b. Norway
c. Sweden
d. The Netherlands

**5.**

Another immigrant—and he was born in the same town as Knudsen—is Charles E. Sorensen. His first job was as an apprentice in a stove works. Today he is president of . . .

a. Ford Motor Co.
b. Willys-Overland, Inc.
c. White Motor Co.
d. Wagner Electric Co.


**6.**

This famous industrialist has earned the slogan, "He starts 'em and he stops 'em," but his first starting and stopping came as an elevator operator in New York. He is . . .

a. E. V. Rickenbacker
b. Charles F. Kettering
c. B. F. Goodrich
d. Vincent Bendix

**7.**

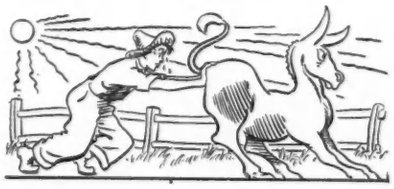
Two competing companies take their name from this Frenchman who worked 12 hours a day for six francs a week as an errand boy in a bicycle plant.

a. Gaston Chevrolet
b. Albert Champion
c. Louis Chevrolet
d. Pierre S. DuPont

**8.**

K. T. Keller still calls himself a "machinist by trade" even though he is now president of . . .

a. Chrysler Corp.
b. International Harvester Co.
c. Diamond T Motor Car Co.
d. Kingham Trailer Co.



**9.**

"Bound out" to a farmer at the age of 6 and forced to earn his own living . . . running away at 12 to begin 15 years of hard farm labor . . . at 27 never having made more than $300 in any one year . . . then taking a job in a Flint, Mich., grocery store at $1 a day . . . and still he became one of the leading figures in the entire automotive industry. He is . . .

a. Ransom E. Olds
b. John Studebaker
c. Charles E. Wilson.
d. Charles W. Nash

**10.**

Last on our list is Otto Zachow. At the age of 16 he was apprenticed to a blacksmith at the magnificent salary of $25 a year and board, but he went on to invent the first practical . . .

a. four-wheel-drive
b. self-starter
c. hydraulic brake
d. compressed air brake

# EXIDE SALUTES

## THE AUTOMOTIVE INDUSTRY ON ITS 50th ANNIVERSARY

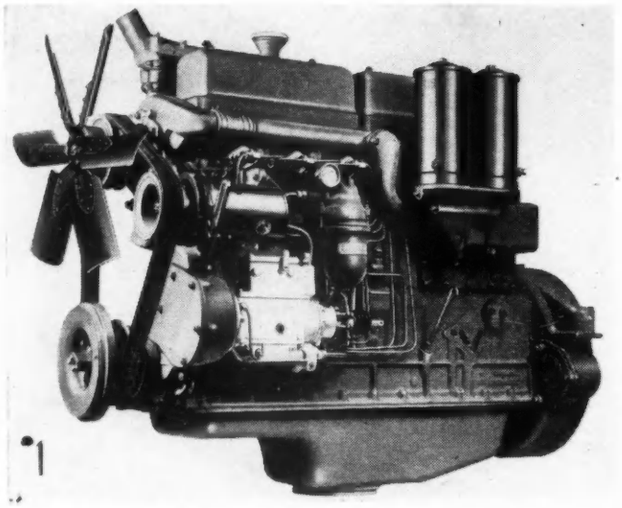
Fifty years . . . less than a single lifetime! But during those fifty years since the first "horseless truck" labored along the streets of Providence, Rhode Island, industrial progress advanced farther than in all the centuries that went before. An outstanding contribution to this progress was made by the automotive industry which this month celebrates its Golden Jubilee.

Exide Batteries have been used in pioneering almost every use of electricity on automotive vehicles. In 1892 they propelled electric horseless carriages, and later electric street trucks. As the gasoline vehicle improved and its electrical requirements increased, Exide Batteries were used for sparking (ignition) in 1902; for lighting, in 1907; and for starting, lighting and ignition, in 1911.

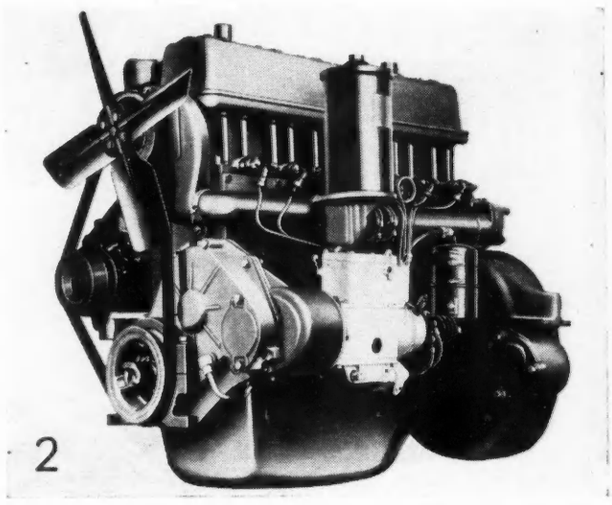
Exide makes batteries for trucks of all sizes and all types . . . gas and Diesel powered. Hundreds of thousands of these trucks are Exide-equipped, for fleet owners have learned that they can count on Exides for dependability, long-life and a lower cost per mile of operation.

**Exide**
**BATTERIES**

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto



*Model RD 6572 6-cyl. transportation diesel power plant*



*The Model TD 6427 6-cyl. transportation diesel engine*

# Continental's New Diesel Interchangeable With Gas Jobs

**Cushioned power combustion chamber reduces peak pressures and makes possible lighter construction. Many parts are identical to those of Red Seal gas engine**

**FEATURES IN COMMON WITH ALL MODELS**

**Engine: 4-stroke cycle, overhead valves, cushioned power combustion chamber. Crankshaft: drop-forged, heat-treated, dynamically balanced, counterweighted, 7-bearing type. Bearing, main and con-rod, heavy-duty steel shell replaceable type lined with alloy. Camshaft: drop-forged and heat-treated, mounted on replaceable steel-backed, babbitt-lined bearings. Cylinder blocks: full length water jacket, removable wet cylinder liners. Pistons: aluminum alloy, of solid skirt type with floating pin. Waterpump: leak-proof with patented carbon seal. Lubrication: full pressure with oil pump of spiral gear, submerged type, generous capacity. Fuel injection equipment: supplied by American Bosch and Ex-Cell-O. Generator: 12-volt, 40-amp. capacity; 55-amp. capacity optional.**

THE long awaited announcement by Continental Motors Corp., regarding its line of postwar diesel engines contains the important note that because the Red Seal Diesel combustion principle does not develop extremely high pressures, usually associated with diesel engine operation and, consequently does not demand excessively heavy structural parts, many of the major elements of these engines are directly interchangeable with Red Seal gasoline engines of the same displacement. This is due to the fact that the engines can operate on 90 octane fuel with about the same range of pressures as in the diesel model. In fact, interchangeability is so extensive as to make it possible to offer engines for any type of fuel—diesel, gasoline, butane, natural gas—for buses, motor trucks, tractors and industrial equipment with little installation change.

The diesel line features the four-stroke cycle, overhead valves, and the "cushioned power" combustion

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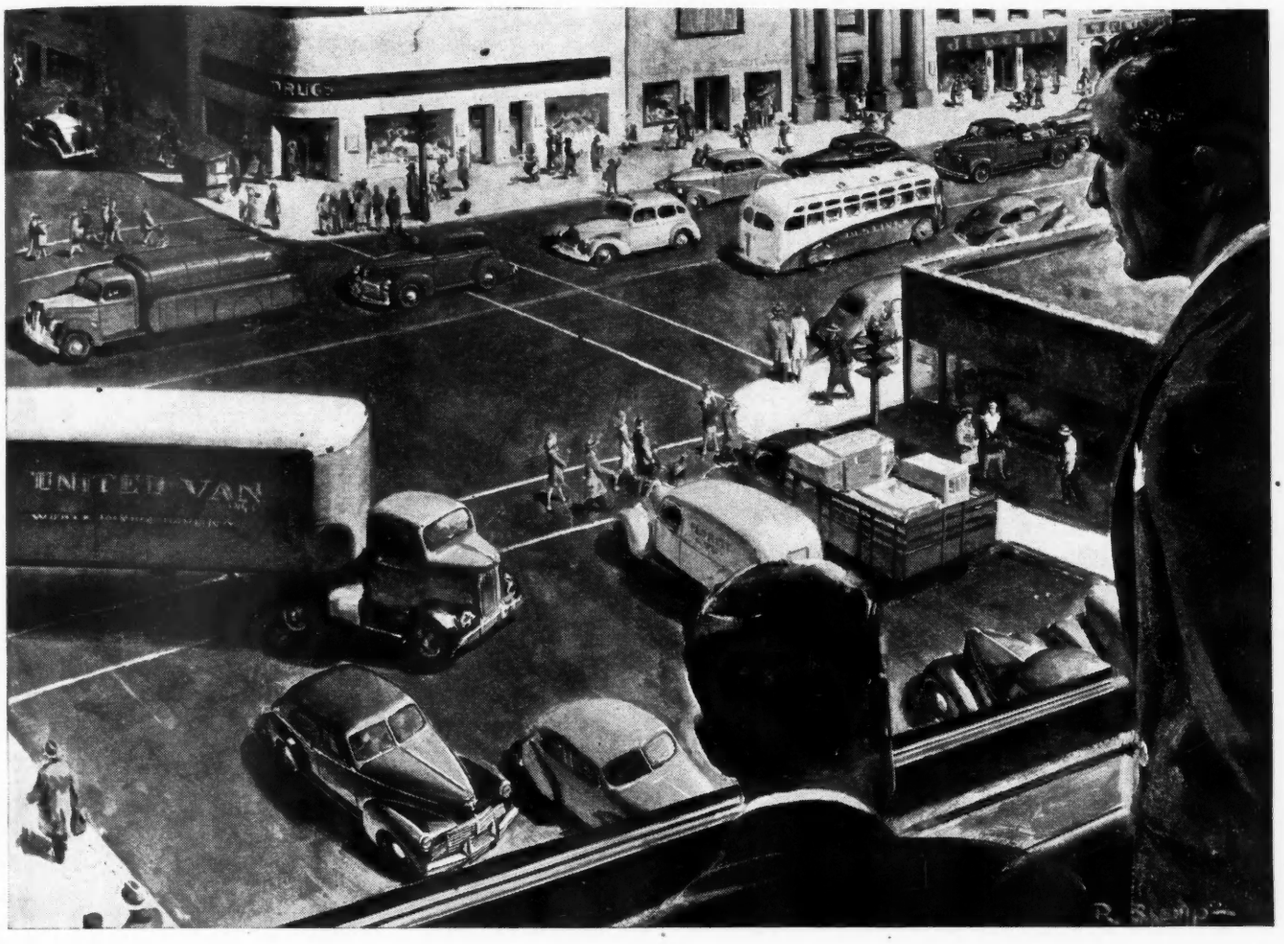



# *"See what I mean? When everyone co-operates traffic seldom gets jammed up!"*

## And consideration for the other fellow helps reduce serious accidents, too!

ALL America is thoroughly alive to the need for decisive action on street and highway congestion.

Our slowed-up traffic lanes are doing more than interfere with transportation. The tie-ups are definitely contributing to an alarming increase in the accident rate. Fatalities and injuries during 1945 each went up more than 17 per cent over 1944.

### Drivers can help solve the problem

Many traffic snarls get started because someone has made a mistake—got out of his lane when he shouldn't have done so—made the wrong turn—cheated a little on a signal light.

It's not easy to condone deliberate disregard of the common courtesies of driving—but frequently it's smart for others on the road to exercise forbearance. Showing up the other fellow often means slowing up everyone—sometimes results in serious accidents.

### Many cars and trucks are hazards

One of the biggest safety hazards right now—and one of the most persistent causes of traffic congestion—is the poor mechanical condition of thousands of over-age cars and trucks.

And that's something all of us who drive can do something about. No vehicle that's unsafe to drive should ever be permitted to take to the road. Regular check-ups and corrective maintenance can stop trouble before it gets dangerous.

### Built-in road safety is vital to all

Impressive programs for traffic relief are under consideration in all sections of the country. Congress itself has authorized the expenditure of 500 million dollars a year on joint federal-state-county-municipal highway improvements.

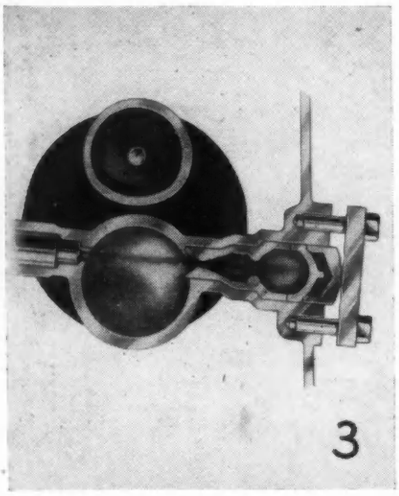
But it's going to take time to effect many of the physical changes—and enough time should be taken in each instance to make sure that every possible safety provision is included before the work begins.

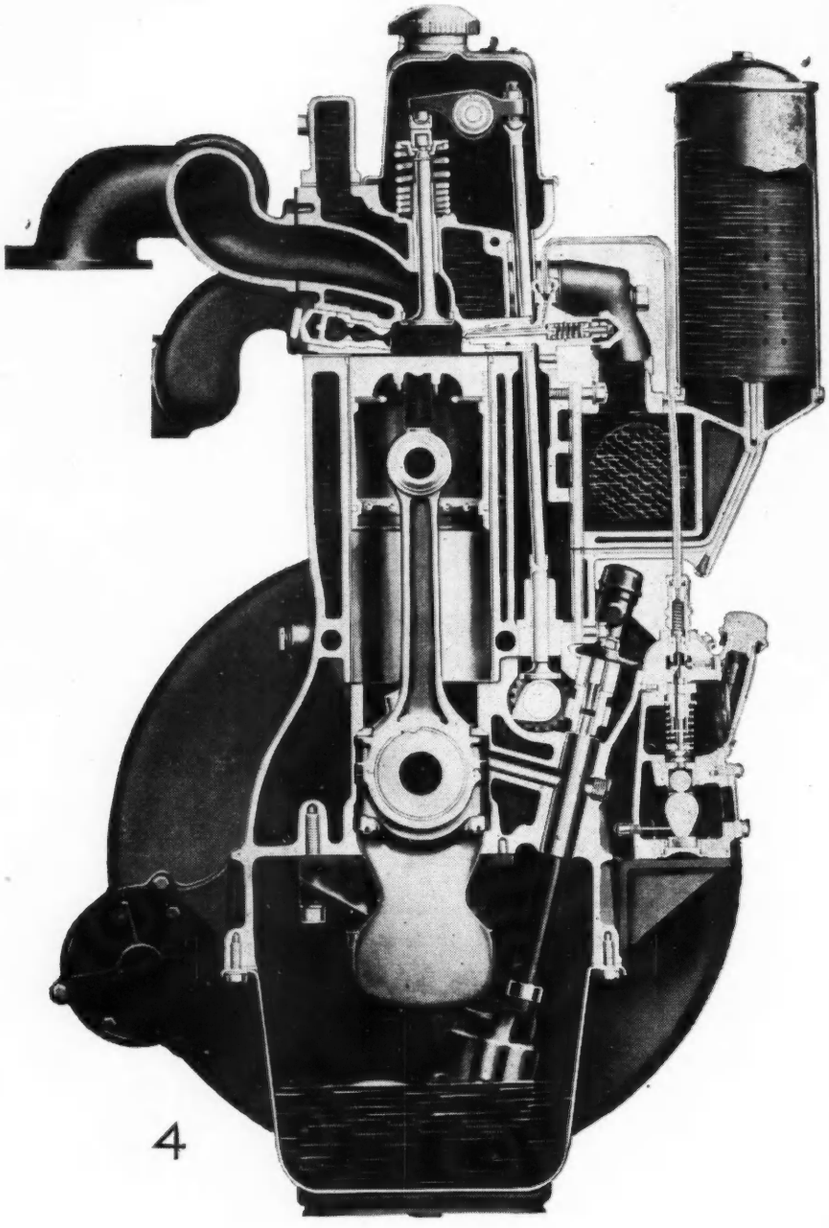
As America's oldest manufacturer of highway vehicles, and a pioneer in safety activities, Studebaker gladly publishes this message in the interest of better traffic conditions for all.

Studebaker

South Bend 27, Indiana, U.S.A.

**PIONEER AND PACEMAKER IN AUTOMOTIVE PROGRESS**




*Above. Horizontal cross sectional view of "cushioned power" combustion chamber. Right. A cross section of the engine at the combustion chamber, showing fuel injection nozzle and Dyna-Cell*

# CONTINENTAL'S NEW DIESEL

(Continued from Page 74)

chamber. It is offered in six basic models for industrial and agricultural applications; and in three models for trucks and buses, the latter being higher speed versions of the corresponding industrial models, as outlined in the tabulation below:

| Models | | Bore | Stroke | Displacement (cu. in.) | Bhp. at Speed (Bare engine) |
|---|---|---|---|---|---|
| KD 6330 | 6 cyl. | 4 | 4½ | 330 | 87 at 2400 |
| TD 6427 | 6 cyl. | 4¼ | 4½ | 427 | 112 at 2400 |
| RD 6572 | 6 cyl. | 4¼ | 5⅛ | 572 | 150 at 2200 |

A typical vertical cross-section through the basic cylinder, including the accessories, is found in Fig. 1, and is a good illustration of the interchangeability between the diesel and carbureted engine, since the combustion chamber and head are separable and do not change the cylinder and crankcase assembly below. This drawing shows the detail of the cylinder assembly, a section through the fuel pump, the combustion chamber, overhead valve linkage, and the integrally-mounted oil filter and oil cooler. Fig. 2 is a selected cross-section of the combustion chamber, showing the fuel injection nozzle at the left, and the Dyna-Cell chamber at the right. The turbulance chamber is in the center of the cylinder directly under the exhaust valve as shown in Fig. 3.

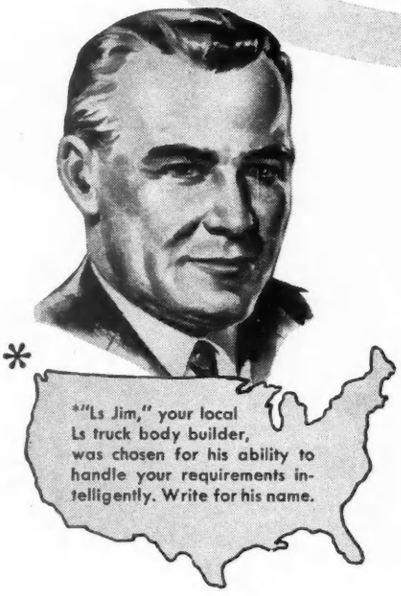
Since the major feature of this engine is its combustion chamber, the operation of the "cushioned" power principle is described more in detail at this point. In the first place, the design incorporates a compression ratio of about 15 to 1. Referring to Fig. 4, it will be seen that the combustion chamber is composed of two elements — the turbulence chamber and the Dyna-Cell. The turbulence chamber concentrates the charge of air around the fuel spray and produces a swirling action or turbulence, characteristic of this design, thus producing a more homogeneous mixture of air and fuel. The Dyna-Cell serves to cushion destructive peak pressures, storing the explosion energy momentarily and thereby reducing noise.

In operation, fuel is injected by the nozzle across the combustion chamber at moderately high pressure

(TURN TO PAGE 144, PLEASE)

Truck with Lindsay Structure body shown after it plungea to the bottom of a 60-foot wooded ravine. The truck crashed squarely on its roof, and repairs were quickly made by a near-by Ls body builder.

# This wrecked truck body didn't have to travel 1,000 miles "back to the factory"



*"Ls Jim," your local Ls truck body builder, was chosen for his ability to handle your requirements intelligently. Write for his name.

Even if an Ls Truck Body didn't give you greater pay loads—

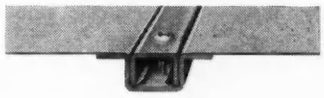
Even if its tensed-metal construction didn't afford greater protection and durability—

Even if it didn't mean faster delivery and lower comparable costs—

You would still profit with an Ls steel or aluminum Truck Body through the service you can get from your Ls Jim—the neighborly capable Local Ls Body Builder. There is an authorized builder in every territory. He will have the stock, the facilities, and the know-how to do a factory repair job on your truck body. That means more service hours.

**The Lindsay Corporation, Adams-Franklin Bldg. Chicago 6, Ill.; 60 E. 42nd St., New York 17, N.Y.; or Lindsay Structure (Canada) Ltd., Dominion Square Bldg., Montreal.**

*Easy to Assemble*

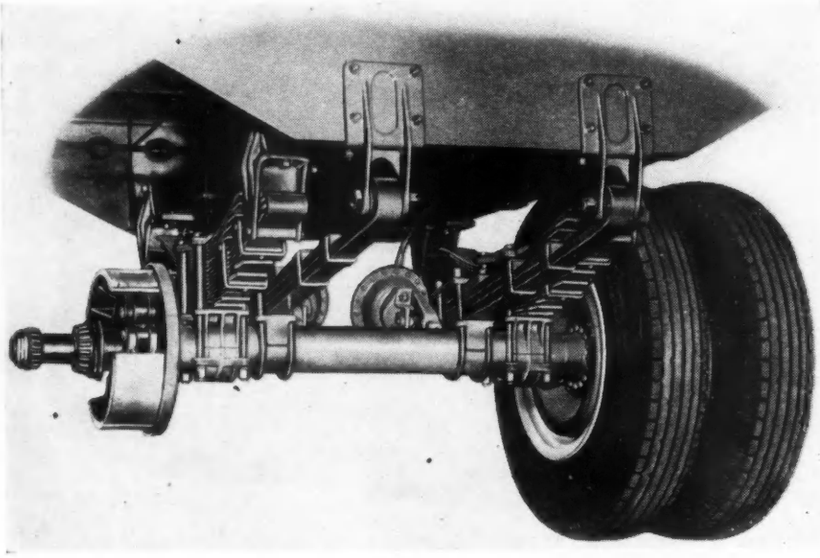


# Ls LINDSAY STRUCTURE

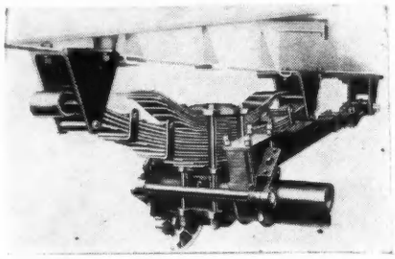
REG. U. S. PAT. OFF.

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending

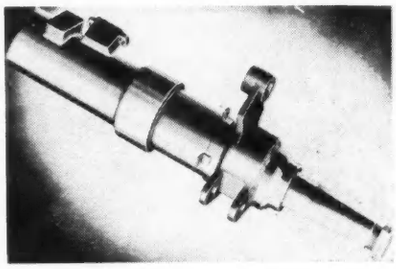
DISTRIBUTORS AND DEALERS THROUGHOUT THE COUNTRY



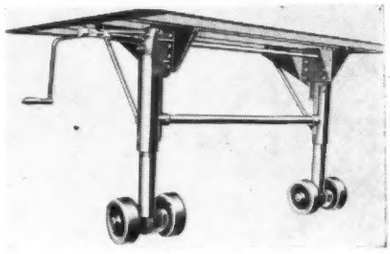
*Stabilized suspension assures equal trailer load distribution*

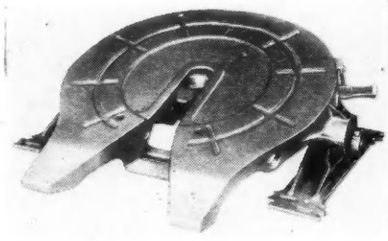


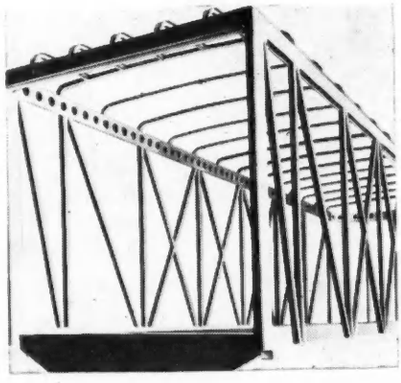
*Above. Long steel torque arms and improved main and helper springs are mounted to the tubular type axle providing four-point suspension*



*The 5-in tubular axle with mountings for spring and torque arms*







*Top. Four-wheel vertical supports provide a ground contact of 16 in. Center. Fifth-wheel plate is wider, allowing backing from all angles. Bottom. Special bridge-truss construction is said to give maximum strength with minimum weight*

# Improved Suspension, Axle Featured by Bantam Supercargos

**Quadri-point spring suspension, trunnion-mounted axles, new springs and torque arms increase hauling economy**

TRADE-approved truck-trailers built to specifications furnished by the fleet field are rolling off assembly lines of the American Bantam Car Co. of Butler, Pa. The present line of Supercargo truck trailers consists of a standardized van, an open-top van, a flatbed and a chassis, in addition to the new all-purpose half-ton utility trailer designed for automobiles and farm tractors. Production goals of at least 500 truck-trailers a month will be obtained by September, according to the company.

The new Supercargo truck trailers offer 31 trade-approved features which are said to improve hauling economy and riding qualities.

A quadri-point spring suspension assures an equalized load at all times. This stabilized suspension provides the trailers with an entirely new spring action. Both fore and aft spring suspension points are always equally loaded regardless of whether the load results from road shock, braking torque or from uneven loading.

The tubular-type axle of the standardized trailer evolved from the experience of war is trunnion-mounted and made to carry the full rated load. The full size bearings are standard stock sizes, easily obtainable and easy-rolling. Trouble-free service is thus assured.

Four-wheel vertical supports are designed and manufactured at the American Bantam plant to fit these units. A ground contact surface of 16 in. is provided by four large-diameter wheels. Legs are firmly attached to the understructure, and the sturdy wheels with rattle-proof, rubber cushioned, self-aligning trunnions, allow supports to be lowered on uneven terrain and distribute weight equally on all wheels.

Damage by shock or overload is prevented by a special bridge-truss construction, which is said to give maximum payload and minimum deadweight.

The upper fifth-wheel plate is a plus-feature, inasmuch as it is fifty per cent wider than on most other trailers, thus allowing backing into from all angles.

Axle and spring suspension is an American Bantam development that brings about tangible hauling economy, according to the manufacturer. Long, sturdy, spring steel torque arms—long main and helper springs—all mounted to the 5 in. tubular axle, provide a new combination.


# SURPLUS HOBART ARC WELDERS

**200, 300 AND 400 AMPERE RATINGS**

Three million dollars worth of surplus Hobart Arc Welders *must* be sold between May 15th and June 15th. Most of this equipment is of the MG type but some quantity is available in gasoline driven units. Arrangements may be made to inspect the offered items. Largest inventories are located at Boston, Detroit, Cleveland, Chicago, Atlanta, Kansas City, Richmond and Philadelphia—but information on availability, condition and location may be obtained at any of the War Assets Administration Regional Offices listed below. The equipment will be sold on a "where is, as is" basis . . . used or unused . . . and priced accordingly. For full information contact the nearest office listed below or check and mail this coupon.

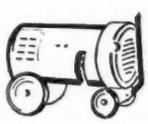
**ALSO MANY OTHER TYPES OF WELDING AND FLAME CUTTING EQUIPMENT**

**LINCOLN**

Hundreds of Lincoln Arc Welders in the popular 300-400 Ampere size are also available; some gasoline engine driven.

**WESTINGHOUSE**

Flexarc equipment for production or construction operations is available in smaller quantity. Also other standard makes and ratings.



**RESISTANCE WELDERS**

*Spot Welders* located in Philadelphia, Detroit, Chicago, Los Angeles, Cleveland and Kansas City; *Seam Welders* in Cleveland, Chicago, Detroit, Birmingham, Boston and Philadelphia. Also *Flash Welders.*

**WELD POSITIONERS**

In standard sizes and types, are located in Detroit, Boston, Chicago and New York.

**FLAME CUTTERS**

Save production time and money with portable or stationary, single or multiple torch flame cutting machines. All types of gas cutting equipment available for quick sale.

**VETERANS OF WORLD WAR II—To help you in purchasing surplus materials, a veterans' unit has been established in each War Assets Administration Regional Office.**

**FREE SALE FACTS**

**To War Assets Administration:**
**Please send me information prior to your sale on the availability, condition and location of Hobart Arc Welders of the following**

types:..... and ratings:.....

.....

.....

**I am also interested in:—**

- ☐ *LINCOLN ARC WELDERS*
- ☐ *WESTINGHOUSE ARC WELDERS*
- ☐ .....*ARC WELDERS* (other)
- ☐ *SPOT, SEAM, FLASH WELDERS*
- ☐ *WELD POSITIONERS*
- ☐ *FLAME CUTTERS*

Name.....

Firm.....

Address.....

City..... State..... 176-2

***All items subject to prior sale***

# WAR ASSETS ADMINISTRATION

**OFFICES LISTED BELOW ARE TEMPORARILY IN RECONSTRUCTION FINANCE CORPORATION AGENCIES**

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## WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 52)

CPA by Congress and the various veterans' organizations. Thus far CPA has been able to resist such pressure on the grounds that the need is so great and widespread that preference to any one group would mean the establishment of complete rationing of all new vehicles. Administratively, rationing would be impossible, since three people make up the personnel of CPA's Automotive Branch.

### Replacement Parts Worry CPA

Even though truck production has been nothing to brag about the past several months, CPA regards the replacement parts situation as perhaps the most critical of all the problems affecting the automotive trade. The problem has been given top priority, for it is clearly recognized that this must be solved before the industry gets rolling on new production.

Largely responsible for the shortage is the fact that price ceilings are still being maintained on replacement parts, while ceilings on original equipment parts have been suspended. OPA's failure to realize that an industry cannot exist "half slave and half free" has been responsible for curtailment of production in many lines.

Truck body producers are confronted with a similar impasse. Ceilings have been suspended on bodies sold for original equipment, but bodies sold to individuals who purchase a chassis and want a special type body are still under control.

### Trailers Feel Plywood Pinch

Truck-trailer producers have found no solution to the difficulties confronting them due to the severe shortage of plywood and other lumber. The emergency housing program will require most of the plywood for many months to come. Body producers are also affected by this shortage, but perhaps not to such an alarming degree.

CPA is attempting to work out a method which will insure trailer producers minimum supplies of these critical materials sufficient to cover uses for which there is no adequate substitute.

Trailer production is estimated at about 4,000 units a month, but the lumber shortage, combined with the coal strike causing a drop in steel supplies, and a tightening up of component supplies may cause a drop in the next month.

### Price Cutting in Tires?

March production of truck and bus tires —1,400,000—was well above the rate required to meet the 1946 goal of 13,700,000 tires. Passenger tire car production rose from 4,600,000 in February to 5,400,000 in March, which was also well above the rate required to attain the goal of 66,000,000 in 1946.

Despite minimum inventories, there are some indications that the industry is catching up with deferred demand. Reports of price cutting in some areas have reached CPA.

A sizable declaration of surplus heavy duty tires is expected to be offered for sale by the end of this month. It is reported that the quantity will be sufficient to take care of all priority claimants with a substantial number left for dealers. In the past priority claimants have taken all new surplus tires.

### Potshots at Price Ceilings

Ceilings on gasoline and other petroleum products will probably be out of existence by the time this issue reaches its readers. Some OPA officials are predicting price wars within 60 days. . . . If tire production continues at its present high rate, truckers can also expect early lifting of tire ceilings. . . . OPA will oppose all rate increases. . . . Ceilings on truck-trailers are likely to be suspended when OPA completes its survey of the industry. . . . Should the House-approved OPA bill be enacted trailers would automatically be decontrolled, since production is well above the 1941 rate. . . . Trucks would not be decontrolled until production climbs considerably. . . . Reliable sources told CCJ that the truck pricing order which has been coming out since last December will be out the middle of May. Also, OPA officially stated, at the end of April, that "dif-

(TURN TO PAGE 82, PLEASE)


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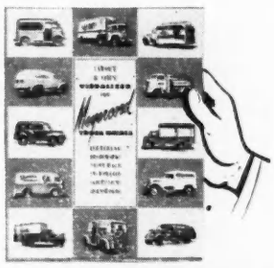
Learn how your trucks can pay for themselves. Send for full details today. Address inquiries to Department 32-5.



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5323 WEST LAKE STREET • • • CHICAGO 44, ILLINOIS

## WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 80)

ferences of opinion" had arisen and the order was being reworked. They also said that ceilings on buses, hearses, ambulances, and other special-type vehicles would be suspended when the order is issued.

### Inside 6 x 6 Story

The War Assets Administration is experiencing difficulty in selling the Army's work-horse, the old 2½ ton 6x6. This is the reason several hundred of these trucks were recently offered by department stores.

Veterans, Federal agencies, and State and local governments were given ample opportunity to buy the trucks before they were sold to dealers who subsequently placed them on sale through department stores.

The 600 2½ ton 6x6 Studebakers offered by Gimbels were part of a lot of 728, originally procured for lend-lease to Russia. They had a cab but no body. They were disassembled and packed for overseas shipment in a twin pack consisting of two trucks in three large packing cases.

They were offered to 4900 priority claimants on Dec. 8, 1945 at a fixed price of $1,954 each. By Feb. 20 only 128 had been sold. Federal agencies bought none. The State of Minnesota bought 2. Veterans bought 40, and dealers bought 40, leaving 600 unsold.

These were bought by 8 dealers, who had difficulty in disposing of them and later made a deal with Gimbel Brothers to sell the trucks for them on a commission basis. The trucks were not owned by the Gimbels. Other trucks offered in department stores were disposed of in the same manner.

### Vets to Get Small Trucks

WAA is holding continuous sales programs on all automotive products. Motor vehicles are being sold at a rate of $27,000,000 a month, parts at a monthly rate of $2,000,000, and maintenance equipment at a rate of $3,000,000 each month.

Under an amendment to the Surplus Property Act, veterans will be given top priority in the sale of surplus property, second only to Federal agencies. Certain critical items will be set aside exclusively for veterans, including small trucks, all trailers and all cars. What constitutes a small truck as applied to veterans has been defined by WAA as a 2½-ton or under.

### Surplus Sour Notes

Some sour notes are beginning to enter the surplus automotive equipment picture. The most evident is the overzealousness on the part of WAA officials to bring a high return to the government.

Replacement engines have been offered for sale at a figure approximating 70 percent of original cost. Most of these engines are special types and while they can be used in the present emergency they would be discarded as soon as new equipment became available. There is no reasonable excuse for demanding a high price on this type of material.

In other cases, engines have been offered at what seemed reasonable prices, but on inpection it was discovered that radiators and other important parts were missing. Where parts might tbe obtained was an unsolvable mystery.

In still another type of all too familiar case, buyers of surplus trucks needing parts have contacted the original producer to procure the needed items. However, the manufacturer had long since completed the military contract and had no such parts. The buyer then contacted CPA for help in getting the parts out of surplus stocks. The Army says that the parts are undoubtedly stocked in any one of a thousand places, and will look for them. All this may take months, but meantime the trucks stand idle.

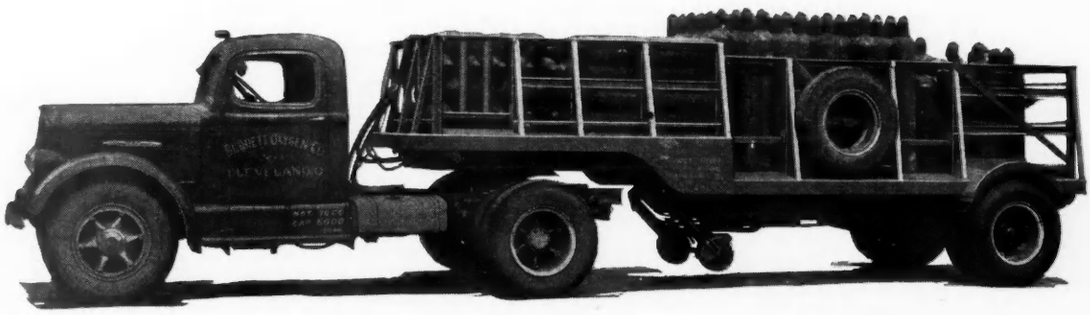
### Congressional Capers

Supporters of the Bulwinkle bill are still confident of eventual Senate approval, with some modifications. The lengthy hearings before the Interstate Commerce Committee brought out substantial opposition from the Justice Dept., Commerce Secretary Wallace, Governor Arnold of Georgia, and

(TURN TO PAGE 84, PLEASE)

A LOAD BEHIND IS A TRIP AHEAD

# SERVICE



Trouble-free service . . . for years beyond measure . . . is assured by the lifetime construction of Kingham Universal Trailers. Those being built today take full advantage of all the vast new knowledge and experience gained during the past five years.

Products of special character cannot be hurried in production. This fact, plus shortages of materials meeting Kingham standards, explain why orders can be accepted *only* for future delivery date. However, the reputation of Kingham Universal Trailers is obviously the reason for so many companies deferring such purchases until they are available.

**KINGHAM TRAILER COMPANY,** INCORPORATED, **LOUISVILLE, KY.**

**Kingham UNIVERSAL**

**NATIONAL SALES . . . NATIONAL SERVICE**

## WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 82)

other liberal groups. A Presidential veto is a distinct possibility. . . . Chairman Burton K. Wheeler's bill calling for a Federal Bureau of Traffic, which would consolidate practically all transportation activities of the government, appears to be another dead duck. The bill will be fought to the bitter end by the Army, Navy and other affected departments. . . . Favorable House action on the Senate-approved minimum wage bill, which retains the trucking industry's overtime exemption status, does not appear likely. If passed as now written it will probably be vetoed. . . . Although $5000 has been appropriated for a Senate transportation survey as proposed by Sen. Ernest W. McFarland, Dem., Ariz., the Senator's resolution will undoubtedly die on the Senate floor. The reasons are tied in with Senate politics. The resolution calls for a study of air transportation as well as the other forms. The Senate Commerce Committee regards the air as its exclusive province and does not want a subcommittee of the Interstate Commerce Committee conducting such a study.

*END*

***(Please resume your reading on P. 53)***



## DETROIT DISPATCH

(CONTINUED FROM PAGE 45)

Wages and Hours Division to be covered by the Act. Their contention is that application of the law is so broad, as interpreted by the Supreme Court in the window washing case, that even local hauling for any company which is remotely connected with interstate commerce comes under the Act.

### Ruling Would Be Ruinous

If the courts uphold the government's case, the result would be ruinous for practically every trucking business. Retroactive pay for overtime beyond 40 hr. per week could be demanded for all employees not previously under jurisdiction of ICC. Labor contracts have been almost uniformly on a 48-hr. week basis. If retroactive pay were to be granted back to the start of the Fair Labor Standards Act, Oct. 24, 1938, most companies would simply have to fold up. As one industry spokesman put it, "It really does not make much difference, because if this goes through it won't make much difference whether we owe one million or five million; we can't pay it anyway."

### Legislative Relief Likely

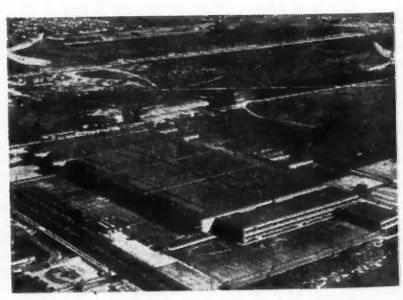
Actually, the situation is so confused and so bad that it may be a good thing in the long run, according to some trucking company heads. They say that since it obviously would be impossible to meet an eight-year retroactive award, legislative relief may be obtained. Already the ground is being prepared in Washington for such action, and the industry is hopeful that in the event the government wins its case, Congress will save the trucking industry from bankruptcy by suitable legislation.

*END*

***(Please resume your reading on P. 46)***

### P & D EXPANDS

P & D Mfg. Co., Inc., Long Island City, N. Y., manufacturers of magnetos and ignition parts, has added a large new building to the plant at Steinway Ave.



The purchase of a plant at El Segundo, Calif., for the production of Nash automobiles and trucks has been announced. The new plant will supplement Nash-Kelvinator facilities in Michigan and Wisconsin

## QUIZ ANSWERS

(CCJ QUIZ on page 72)

1. b. Walter Chrysler, whose first job was as an apprentice in the Union Pacific shops at Ellis, Kan.

2. b. Henry Ford was born on a little farm near Dearborn, Mich., site of his great River Rouge plant.

3. c. Henry J. Kaiser, who has recently entered the automotive field with the Kaiser-Frazer Corp.

4. a. Denmark. Knudsen was born in Copenhagen and came to this country at the age of 21. His first American job was that of a reamer in a New Jersey shipyard at $1.75 a day.

5. b. Willys-Overland. Sorensen's first job was in the pattern department of the Jewett Stove Works, Buffalo, N. Y. After spending many years with Ford, he recently took over the helm at Willys. He is the builder of the enormous Willow Run plant and is regarded by many as America's greatest genius for mass production.

6. d. Vincent Bendix. His Bendix drive and four-wheel brakes won that slogan for him. Today very few automotive vehicles—or aircraft—do not incorporate some Bendix part.

7. b. Albert Champion went from bicycles to motorcycles. As a motorcycle racer he found the need for a better spark plug for motorcycles and he made one. Then he found such a plug was needed for automobiles and he made it applicable to motor cars. Both the Champion Spark Plug Co. and the AC Spark Plug Division are named for him.

8. a. Chrysler Corp. Keller started as a bench hand with Westinghouse Machine Co. in 1906 and has always prided himself as being a master mechanic.

9. d. Charles W. Nash, whose rise in the industry has excelled anything of Horatio Alger. He was to rise to the presidency of General Motors and later to start a company of his own.

10. a. Zachow in 1908 built a steam-driven vehicle with a four-wheel drive. The steam power plant was a failure, but the drive mechanism worked. Out of these experiments came the Four Wheel Drive Auto Co. of Clintonville, Wis. Zachow did not make a fortune from his invention, because he soon sold out his holdings in the company.

## SHOP HINTS

(CONTINUED FROM PAGE 47)

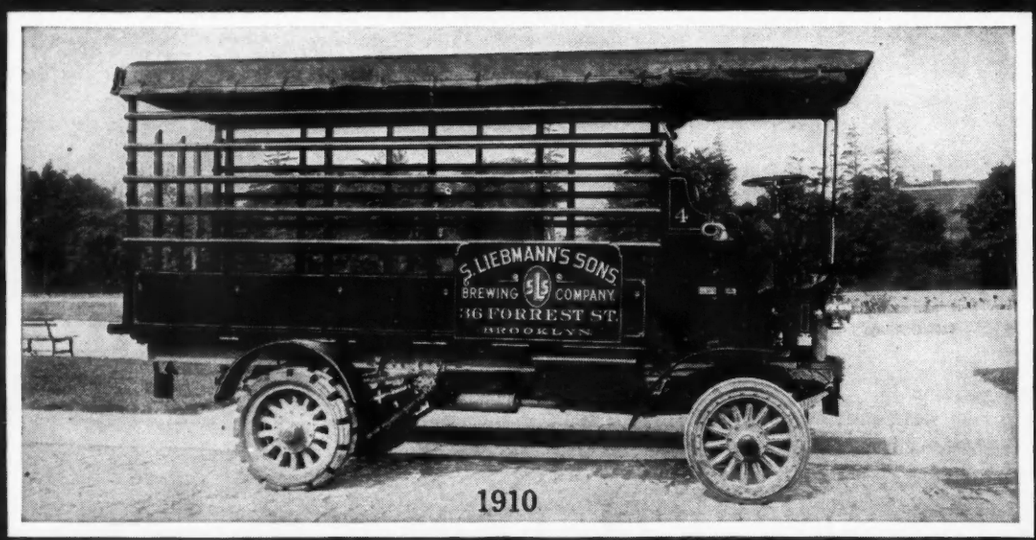
tools are damaging to this type of tire, so I devised a tool that makes the job easier and more simple.

It is made out of a light bumper bar long enough to fit in the rim of the wheel. A bracket is welded to this bar, and an 18-in. lever is mounted to the bracket as shown in the drawing. A lip 2½ in. long and 1½ in. wide at the head is fastened to the lever. This should have a bearing so that it will move easily. I made bearings for this piece from ⅜-in. pipe.

The iron is laid across the wheel. The ends rest against the rim and the lever lip rests against the bead on one side of the wheel. As the lever is pulled down, the lip pushes the tire bead out so that it can be pushed into place over the rim. The iron is moved around the wheel in this manner until the whole tire is in place.

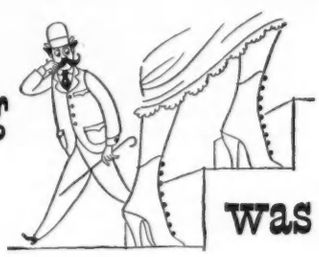
*END*

*(Please resume your reading on P. 48)*




1910

# When a lady's stocking



# was slightly shocking...

A nickel got you a tall beer back then, and a spot of free lunch besides. And you could stand with one pearl-buttoned shoe on the rail and watch them roll out the barrels of good Rheingold from the early Mack Truck above.

That was in 1910. Now, in 1945, Mack Trucks still work for the Liebmann Breweries, brewers of Rheingold Extra Dry Beer. Through the years, they have proved themselves dependable performers.

Put a Mack Truck to work for you, and you'll understand why so many long-established and successful companies have used Macks for nearly half a century.


*Mack Trucks, Inc., Empire State Building, New York City. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and dealers in all principal cities for service and parts.*

**Mack**
**TRUCKS**
**FOR EVERY PURPOSE**

**Performance Counts**

# TRUCK SPECIFICATIONS TABLE

## OF 1946 PRODUCTION MODELS

### DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

### COMMERCIAL CAR JOURNAL

## KEY TO DEFINITIONS, REFERENCES AND ABBREVIATIONS

### DEFINITIONS

**MAKE AND MODEL**
Only Domestic Truck Models are listed.

**OPTIONAL UNITS**

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

**CHASSIS LIST PRICE**

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

**RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE**

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

**CHASSIS WEIGHT**

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

**STANDARD TIRE SIZE**

The standard tire size listed is that which is included in the Chassis List Price.

**MAXIMUM AUTHORIZED TIRE SIZE**

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

**MINIMUM STANDARD WHEELBASE**

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

**MAXIMUM STANDARD WHEELBASE**

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

**MAXIMUM BRAKE HP.**

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

**GEAR RATIO RANGE**

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

**TRACTORS**

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

### KEY TO REFERENCES

**c.f.**—Cab Forward design.
**c.o.e.**—Cab-Over-Engine design.
**(D)**—Diesel-engine equipped.
**(T)**—Designed for tractor use only.
**(C)**—Converted Ford or Chevrolet Model.

**(2) International Harvester**—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

Also the company reserves the privileges of assigning special gross vehicle ratings for any chassis providing in the opinion of our engineering department, the type of service justifies the new rating without decreasing the safety factor designed into the truck.

**(a)**—Available with Eaton Two-Speed Axle designated KS Models.

**(b)** Current models will include, at additional cost, certain items not considered standard equipment. These items are included in the specifications and are listed below—Model K-3, oversize transmission; Model K-6, K-7 and K-6-F, oversize brakes; Model K-8, oversize engines and brakes; Model K-10, oversize engine, transmission and brakes; Model KR-11, oversize engine and transmission; Models K-8F and K-11-F, oversize engine and brakes.

## KEY TO ABBREVIATIONS

### MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken.
TW—Timken-Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Ws—Westinghouse.
WW—Westinghouse or Wagner

### BRAKES—SERVICE

#### Location

4—Four Wheels, front and rear
4r—Four Wheels, rear only.

#### Type

I—Internal.
X—External

#### Operation

A—Air.
H—Hydraulic.
V—Vacuum.

### BRAKES—HAND

#### Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

#### Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

### BRAKE DRUMS

#### Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

### FRAME

#### Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.

### GOVERNOR STANDARD

Y—Yes.
N—No.

### REAR AXLE

#### Final Drive and Type

B—Bevel.
F—Full-floating.
Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
½—Semi-Floating
T—Torque Tube

#### Gear Ratios

(**) Only one ratio.

#### Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

### WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
6—All wheels.

| Line Number | MAKE AND MODEL | Chassis List Price | WHEELBASE Minimum Standard | WHEELBASE Maximum Standard | Gross Vehicle Weight for Normal Service | Chassis Weight (See definition) | TIRE SIZES D-dual rear S-single rear Standard Front and Rear | TIRE SIZES Maximum Authorized Tire Size (Duals unless noted) | ENGINE DETAILS Make and Model | No. of Cylinders, Bore and Stroke | Displacement | Comp. Ratio | Torque lb. ft. | Max. Brake H.P. at R.P.M. Given | Main Bearings Number, Diameter and Length | Governor Standard | TRANSMISSION Make and Model | Forward Sp'ds | REAR AXLE Make and Model | Gear and Type | Drive X Torque | Gear Ratio Range in High | FRONT AXLE Make and Model | BRAKES SERVICE Make Location Type Operat'n | BRAKES SERVICE Lining Area | BRAKES SERVICE Drum Area | BRAKES SERVICE Drum Material | BRAKES SERVICE Hand Location Type | C-A Dimensions (Min. Std. W. B.) | FRAME Side Rail Dimensions | FRAME Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Available | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | CS200-SP | | 126 | 133 | 15000 | | 7.00/20D | 7.50/20 | Wau 6BM | 6–3⅛x4¼ | 263 | 5.9 | 180 | 78–2800 | 7–2⅛x10¼ | N | WG T9 | 4 | Tim 53440H | SF | H | ** –6.67 | Tim 32502H | L4IH | | | | TX | Opt | 10x3x¼ | T |
| 3 | C-250-SP | | 105 | | 18000 | | 7.50/20D | 8.25/20 | Wau 6BZ | 6–4x4½ | 320 | 5.9 | 210 | 95–2500 | 7–2⅝x10¼ | N | Fu 5A330 | 5 | Tim 54411H | SF | R | 6.83–7.4 | Tim 32502H | L4IH | 334 | 583 | a | TX | Opt | 10x3x¼ | T |
| 4 | CS-250-SP | | 105 | | 20000 | | 8.25/20D | 9.00/20 | Wau 6BZ | 6–4x4½ | 320 | 5.9 | 210 | 95–2500 | 7–2⅝x10¼ | N | Fu 5A330 | 5 | Tim 54411H | SF | R | 6.83–7.4 | Tim 32502H | L4IH | 334 | 583 | a | TX | Opt | 10x3x¼ | T |
| 5 | CS-400-LSP | | 105 | | 21500 | | 9.00/20D | 10.00/20 | Wau 6BZ | 6–4x4½ | 320 | 5.9 | 210 | 95–2500 | 7–2⅝x10¼ | N | Fu 5A330 | 5 | Tim 56410H | SF | R | 6.83–7.4 | Tim 35000H | L4IH | 334 | 583 | a | TX | Opt | 12x3x¼ | T |
| 6 | CS-500-SP | | 105 | | 22000 | | 9.00/20D | 10.00/20 | Wau 6MZA | 6–4¼x4¾ | 404 | 5.9 | 286 | 112–2500 | 7–2⅝x12½ | Y | Fu 5F430 | 5 | Tim 56410H | SF | R | 6.83–7.4 | Tim 35000H | L4IH | 334 | 583 | a | TX | Opt | 12x3x¼ | T |
| 7 | CS-550-SP | | 105 | | 24000 | | 9.00/20D | 10.00/20 | Wau 6MZA | 6–4¼x4¾ | 404 | 5.9 | 286 | 112–2500 | 7–2⅝x12½ | Y | Fu 5F430 | 5 | Tim 58300H | SF | R | 6.83–7.4 | Tim 35000H | L4IH | 380 | 660 | a | TX | Opt | 12x3x¼ | T |
| 8 | CS-550-SPX | | 112 | | 32000 | | 10.00/20D | 11.00/20 | Wau 6MZA | 6–4¼x4¾ | 404 | 5.9 | 286 | 112–2500 | 7–2⅝x12½ | Y | Fu 5F430 | 5 | Tim 8200H | 2F | R | ** –7.84 | Tim 26450H | L4IH | 570 | 1051 | a | TX | Opt | 14x3x⅞ | T |
| 9 | CS-600 | | Opt | Opt | 36000 | | 11.00/20 | 11.00/24 | Wau 6SRKR | 6–4⅝x5½ | 517 | 5.9 | 365 | 125–2300 | 7–2⅝x12½ | Y | Fu 5F430 | 5 | Tim 8200PA | 2F | R | ** –7.84 | Tim 27452TW | L4IH | 722 | 1051 | a | TX | Opt | 14x3x⅞ | T |
| 10 | CS-600-SP | | Opt | Opt | 40000 | | 11.00/20 | 11.00/24 | Wau 145GK | 6–5½x6 | 779 | 5.6 | 590 | 186–2000 | 7–3½x17¾ | Y | Spl 78418[v] | 5 | Tim 8200PA | 2F | R | 6.42–7.84 | Tim 27452TW | L4IH | 722 | 1051 | a | TD | Opt | 14x3x⅞ | T |
| 11 | (D)CS-600-SP.Opt. | | Opt | Opt | 40000 | | 11.00/20 | 11.00/24 | Cum HB600 | 6–4⅞x6 | 672 | 17 | 510 | 150–1800 | 7–4½x16½ | Y | Spl 78418[v] | 5 | T SW3012PA | WF | R | ** –6.16 | Tim 27452TW | L4IH | | | A | TD | Opt | 14x3x⅞ | T |
| 12 | Chevrolet ....DP | | 115 | 115 | 4600 | | 6.00/16S | 15S | O-Thrift Mas. | 6–3½x3¾ | 216 | 6.5 | 174 | 90–3300 | 4–2¾x5⅛ | N | Own | 3 | Own | Hy | T | ** –4.11 | Own | O41H | 164 | 242 | Co | 2I | 38¼ | 5¼x2¼x⅜ | C |
| 13 | .....DR | | 125 | 125 | 5800 | | 15S | 7.00/17S | O-Thrift Mas. | 6–3½x3¾ | 216 | 6.5 | 174 | 90–3300 | 4–2¾x5⅛ | N | Own | 3 | Own | HyF | H | ** –4.57 | Own | O41H | 183 | 272 | Co | 2I | 48½ | 5½x2¼x⅜ | C |
| 14 | .....DS | | 134 | 134 | 8800 | | 7.00/17S | 7.00/18 | O-Thrift Mas. | 6–3½x3¾ | 216 | 6.5 | 174 | 90–3300 | 4–2¾x5⅛ | N | Own | 4 | Own | HyF | H | ** –5.14 | Own | O41H | 248 | 371 | Co | 2I | 57¾ | 7x2¼x⅜ | C |
| 15 | .....PJ | | 134 | 134†13000 | | | 7.00/20S | 7.00/20 | O-Thrift Mas. | 6–3½x3¾ | 216 | 6.5 | 174 | 90–3300 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 5.43 | Own | O41H | 330 | 478 | Co | 2I | 57¾ | 7x2¼x⅜ | P |
| 16 | .....PK | | 160 | 160†13000 | | | 7.00/20S | 7.00/20 | O-Thrift Mas. | 6–3½x3¾ | 216 | 6.5 | 174 | 90–3300 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 5.43 | Own | O41H | 330 | 478 | Co | 2I | 83¼ | 7x2¼x⅜ | P |
| 17 | (School bus)..PL | | 160 | 160 | 12000 | | 6.50/20D | 7.00/20 | O-Thrift Mas. | 6–3½x3¾ | 216 | 6.5 | 174 | 90–3300 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 5.43 | Own | O41H | 330 | 478 | Co | 2I | | 7x2¼x⅜ | P |
| 18 | .....PVS | | 134 | 134 | 14000 | | 7.50/20D | 7.50/20 | O-Load Mas. | 6–3⅞x3¾ | 235 | 6.6 | 192 | 93–3100 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 5.43 | Own | O41H | 330 | 478 | Co | 2I | 57¾ | 7x2¼x⅜ | P |
| 19 | .....PWS | | 160 | 160 | 14000 | | 7.50/20D | 7.50/20 | O-Load Mas. | 6–3⅞x3¾ | 235 | 6.6 | 192 | 93–3100 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 6.17 | Own | O41H | 330 | 478 | Co | 2I | 83¼ | 7x2¼x⅜ | P |
| 20 | (c.o.e.).....PP | | 109 | 109 | 16000 | | 7.50/20D | 8.25/20 | O-Load Mas. | 6–3⅞x3¾ | 235 | 6.6 | 189 | 90–3100 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 6.17 | Own | O41H | 330 | 478 | Co | 2I | 62½ | 7x2¼x⅜ | P |
| 21 | (c.o.e.).....PR | | 132 | 132 | 16000 | | 7.50/20D | 8.25/20 | O-Load Mas. | 6–3⅞x3¾ | 235 | 6.6 | 189 | 90–3100 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 6.17 | Own | O41H | 330 | 478 | Co | 2I | 86 | 7x2¼x⅜ | P |
| 22 | (c.o.e.).....PS | | 158 | 158 | 16000 | | 7.50/20D | 8.25/20 | O-Load Mas. | 6–3⅞x3¾ | 235 | 6.6 | 189 | 90–3100 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 6.17 | Own | O41H | 330 | 478 | Co | 2I | 111½ | 7x2¼x⅜ | P |
| 23 | .....PV | | 134 | 134 | 15000 | | 7.50/20D | 8.25/20 | O-Load Mas. | 6–3⅞x3¾ | 235 | 6.6 | 192 | 93–3100 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 6.17 | Own | O41H | 330 | 478 | Co | 2I | 57¾ | 7x2¼x⅜ | P |
| 24 | .....PW | | 160 | 160 | 15000 | | 7.50/20D | 8.25/20 | O-Load Mas. | 6–3⅞x3¾ | 235 | 6.6 | 192 | 93–3100 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | 6.17 | Own | O41H | 330 | 478 | Co | 2I | 83¼ | 7x2¼x⅜ | P |
| 25 | (School bus) .PX | | 195 | 195 | 15000 | | 7.50/20D | 8.25/20 | O-Load Mas. | 6–3⅞x3¾ | 235 | 6.6 | 192 | 93–3100 | 4–2¾x5⅛ | Y | Own | 4 | Own | HyF | H | ** –6.17 | Own | O41H | 330 | 478 | Co | 2I | | 7⅛x2¼x⅜ | P |
| 26 | Corbitt (T). 18TG | | 137 | 137 | 18000 | z7200 | 9.00/20 | 10.00/20 | Con M6330 | 6–4x4¾ | 330 | 5.7 | 240 | 102–2800 | 7–2⅝x12 | Y | Fu 5A330 | 5 | Tim 56410PA | SF | H | ** –6.17 | Tim 32502TW | Ws4IA | | 744 | a | TX | 60½ | 7⅞x3¼x¼ | T |
| 27 | (T).....22TG | | 145 | 145 | 22000 | z8500 | 10.00/20 | 10.00/22 | Con B6427 | 6–4⅞x4⅞ | 427 | 6.1 | 332 | 127–2600 | 7–2⅝x13½ | Y | Fu 5A43 | 5 | Tim 58300PA | SF | H | ** –5.25 | Tim 35000TW | Ws4IA | | 847 | a | TX | 60½ | 8x3¼x¼ | T |
| 28 | (T).....25TG | | 148 | 148 | 25000 | z9600 | 10.00/22 | 11.00/22 | Con R6513 | 6–4⅛x5⅝ | 513 | 5.9 | 400 | 165–2600 | 7–3¼x14½ | Y | Fu 5A620 | 5 | Tim 58415PA | SF | H | ** –6.14 | Tim 35100TW | Ws4IA | | 946 | a | 2 | 60½ | 8½x3¼x¼ | T |
| 29 | (T).....28TG | | 148 | 148 | 28000 | z9800 | 10.00/22 | 11.00/24 | Con R6602 | 6–4⅛x5⅝ | 602 | 6.0 | 460 | 185–2600 | 7–3¼x14½ | Y | Fu 5A650 | 5 | Tim 8200PA | 2F | H | ** –6.42 | Tim 26450W | Ws4IA | | 1159 | a | TD | 60½ | 8½x3¼x¼ | T |
| 30 | (D) (T)....22TD | | 145 | 145 | 22000 | z8700 | 10.00/20 | 10.00/22 | Her DWXD | 6–4¼x4¾ | 404 | ... | 330 | 146–2600 | 7–..... | Y | Fu 5A430 | 5 | Tim 98415PA | dF | H | 6.53–8.53 | Tim 35000TW | Ws4IA | | 847 | a | TX | 60½ | 8x3¼x¼ | T |
| 31 | (D) (T)....25TD | | 148 | 148 | 25000 | z9800 | 10.00/22 | 11.00/22 | Her DRXC | 6–4⅝x5¼ | 529 | ... | 400 | 140–2000 | 7–3½x13¾ | Y | Fu 5A620 | 5 | Tim 98415PA | dF | H | 6.53–8.53 | Tim 35100TW | Ws4IA | | 946 | a | 2 | 60½ | 8½x3¼x¼ | T |
| 32 | (D) (T)....27TD | | 152 | 152 | 27000 | z10000 | 10.00/22 | 11.00/24 | Cum HB6 | 6–4¾x6 | 672 | 17. | 500 | 150–1800 | 7–4½x16½ | Y | Fu 5A420 | 5 | Tim 58415PA | SF | H | ** –5.14 | Tim 26450W | Ws4IA | | 1055 | a | 2 | 60½ | 8½x3¼x¼ | T |
| 33 | (D) (T)....28TD | | 155 | 155 | 28000 | z10400 | 10.00/22 | 11.00/24 | Cum NHB6 | 6–5½x6 | 742 | ... | 575 | 200–2100 | 7–..... | Y | Fu 5A920 | 5 | Tim 8200PA | 2F | H | ** –6.42 | Tim 26450W | Ws4IA | | 1159 | a | TD | 60½ | 8½x3¼x¼ | T |
| 34 | .....18BG | | 137 | Opt | 18000 | | 9.00/20 | 10.00/20 | Con M6330 | 6–4x4⅝ | 330 | 5.7 | 240 | 102–2800 | 7–2⅝x12 | Y | Fu 5A330 | 5 | Tim 56410H | SF | H | ** –6.17 | Tim 32502H | L4IHV | | 578 | a | TX | ..... | 8x3¼x¼ | T |
| 35 | .....22BG | | 145 | Opt | 22000 | | 10.00/20 | 10.00/22 | Con B6371 | 6–4½x4⅝ | 371 | 5.7 | 280 | 100–2500 | 7–2½x13½ | Y | Fu 5A430 | 5 | Tim 58300H | SF | H | ** –6.14 | Tim 35000H | L4IHV | | 660 | a | TX | ..... | 8x3¼x¼ | T |
| 36 | .....25BG | | 148 | Opt | 25000 | | 10.00/22 | 11.00/22 | Con B6427 | 6–4¼x4⅝ | 427 | 6.1 | 332 | 127–2600 | 7–2⅝x13½ | Y | Fu 5A430 | 5 | Tim 58415PA | SF | H | ** –6.14 | Tim 35100TW | Ws4IA | | 946 | a | TX | ..... | 8½x3¼x¼ | T |
| 37 | .....28BG | | 148 | Opt | 28000 | | 11.00/22 | 11.00/24 | Con R6513 | 6–4½x5½ | 513 | 5.9 | 400 | 165–2600 | 7–3¼x14½ | Y | Fu 5A620 | 5 | Tim 8200PA | 2F | H | ** –6.42 | Tim 26450W | Ws4IA | | 1159 | a | TD | ..... | 10½x3¼x¼ | Tf |
| 38 | (D).....18BD | | 137 | Opt | 18000 | | 9.00/20 | 10.00/20 | Her DJXC | 6–3¼x4½ | 298 | ... | 208 | 83–2600 | 7–3x10⅛ | Y | Fu 5A330 | 5 | Tim 96710PA | dF | H | 6.08–8.12 | Tim 32502TW | Ws4IA | | 744 | a | TX | ..... | 8x3¼x¼ | T |
| 39 | (D).....25BD | | 148 | Opt | 25000 | | 10.00/22 | 11.00/22 | Her DWXD | 6–4¼x4¾ | 404 | ... | 330 | 146–2600 | 7–..... | Y | Fu 5A430 | 5 | Tim 98415PA | dF | H | 6.53–8.53 | Tim 35000TW | Ws4IA | | 847 | a | TX | ..... | 8½x3¼x¼ | T |
| 40 | Diamond T.404HH | | 139 | 175 | 14700 | 5000 | 8.25/20D | 8.25/20 | Her CBJXE | 6–3¼x4¼ | 245 | 5.7 | 174 | 77–2800 | 7–2½x10⅜ | Y | WG T9A | 4 | Eat A35-1350 | SF | H | Dual Rge. | Cla F450 | L4IHV | 363 | 522 | A | TX | 60 | 8⅛x3½x¼ | T |
| 41 | .....509 | | 139 | 175 | 14700 | 5200 | 8.25/20D | 8.25/20 | Her CBJXC◆ | 6–3¾x4¼ | 282 | 5.9 | 214 | 86–2800 | 7–2½x10⅜ | Y | WG T9A | 4 | Eat A35-1350 | SF | H | Dual Rge. | Cla F450 | L4IHV | 363 | .... | A | TX | 60 | 8⅛x3½x¼ | T |
| 42 | .....509SC | | 106 | 151 | 14700 | 5300 | 8.25/20D | 8.25/20 | Her CBJXC◆ | 6–3¾x4¼ | 282 | 5.9 | 214 | 86–2800 | 7–2½x10⅜ | Y | WG T9A | 4 | Eat A7-1350 | SF | H | Dual Rge. | Cla F452 | L4IHV | 363 | .... | A | TX | 60 | 8⅛x3½x¼ | T |
| 43 | .....614H | | 139 | 175 | 18800 | 6200 | 9.00/20△ | 9.00/20△ | Her CBJXD | 6–4x4¼ | 320 | 5.9 | 228 | 96–2800 | 7–2½x10⅜ | Y | Cla 250V | 5 | Eat A34-18000 | SF | H | Dual Rge. | Cla F450 | L4IHV | 481 | .... | A | TD | 60 | 8⅛x3½x¼ | T |
| 44 | .....702 | | 130 | 142 | 23000 | 8200 | 10.00/20D | 10.00/20 | Her WXLC-3 | 6–4¼x4¾ | 404 | 5.9 | 300 | 114–2800 | 7–2⅝x13¼ | Y | Cla 270V | 5 | Eat A30-18001 | SF | R | Dual Rge. | Tim 35100TW | Ws4IA | 618 | .... | A | TD | 60 | 10x3½x¼ | T |
| 45 | .....806H | | 154 | 190 | 28000 | 9400 | 11.00/20D | 11.00/20 | Her WXLC3 | 6–4¼x4¾ | 404 | 5.9 | 300 | 114–2800 | 7–2⅝x13¼ | Y | Spl 6241-6031 | 12 | Tim U200P | SF | R | ** –7.84 | Tim 35100TW | Ws4IA | 722 | .... | A | TD | 84 | 10½x3¼x⅜ | T |
| 46 | .....900 | | 154 | 154 | 30000 | 10000 | 10.00/22D | 10.00/22 | Her RXLC | 6–4½x5¼ | 529 | 5.4 | 365 | 132–2100 | 7–3½x13¾ | Y | Spl 6241-703 | 12 | Tim U200P | 2F | R | ** –7.08 | Tim 360z1 TW | Ws4IA | 722 | .... | A | TD | 84 | 10½x3¼x⅜ | T |
| 47 | (D).....910 | | 172 | 172 | 36000 | 12300 | 10.00/22D | 10.00/20 | Cum HB600 | 6–4⅞x6 | 672 | 17. | 500 | 150–1800 | 7–4½x16¾ | Y | Spl 7851, 703 | 15 | Tim U200P | 2F | R | ** –7.08 | Tim 36021TW | Ws4IA | 722 | .... | A | TD | 90½ | 10½x3¼x⅜ | T |
| 48 | Dodge.....WC | | 116 | 116 | 4200 | | 6.00/16 | 5.25/20S | Own | 6–3¼x4⅜ | 217 | 6.8 | 172 | 95–3600 | 4–2½x4⅜ | N | NP | 3 | Own | HyS | H | 3.70–4.70 | Own | O41H | 148 | 251 | CI | TX | 40¼ | 6½x2⅛x⅛ | ..... |
| 49 | .....WD15 | | 120 | 120 | 5200 | | ..... | ..... | Own | 6–3¼x4⅜ | 217 | 6.8 | 172 | 95–3600 | 4–2½x4⅜ | N | NP | 3 | Own | HyS | H | 3.73–4.78 | Own | O41H | 183 | 276 | CI | TX | 40¼ | 6½x2⅛x⅛ | ..... |
| 50 | .....WF31 | | 135 | 135 | 13500 | | 6.50/20‡ | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Own | HyF | H | 5.10–6.80 | Own | O41H | 252 | 406 | CI | TX | 60 | 7x2¼x.21 | P |
| 51 | .....WF32 | | 160 | 160 | 13500 | | 6.00/20‡ | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Own | HyF | H | 5.10–6.80 | Own | O41H | 252 | 406 | CI | TX | 84¼ | 7x2¼x.21 | P |
| 52 | .....WFM38 | | 159 | 159 | 13500 | | 6.00/20‡ | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Own | HyF | H | 5.10–6.80 | Own | O41H | 252 | 406 | CI | TX | 114 | 7⅛x2¼x.21 | P |
| 53 | .....WFA31 | | 135 | 135 | 14000 | | 6.00/20‡ | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Eat | SFd | H | Dual Rge. | Own | O41H | 252 | 406 | CI | TX | 60 | 7x2¼x.21 | P |
| 54 | .....WFA32 | | 160 | 160 | 14000 | | 6.00/20‡ | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Eat | SFd | H | Dual Rge. | Own | O41H | 252 | 406 | CI | TX | 84¼ | 7x2¼x.21 | ..... |
| 55 | .....WH47 | | 160 | 160 | 15000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | N | NP | 5 | Own | HyF | H | 5.10–7.10 | Own | O41HV | 335 | 609 | CI | TX | 84¼ | 8⅛x2⅛x⅛ | ..... |
| 56 | .....WH45 | | 136 | 136 | 15000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | N | NP | 5 | Own | HyF | H | 5.10–7.10 | Own | O41HV | 335 | 609 | CI | TX | 60¼ | 8⅛x2⅛x⅛ | P |
| 57 | .....WHA45 | | 136 | 136 | 16000 | | 6.50/20 | 8.25/20° | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | N | NP | 5 | Eat | SFd | H | Dual Rge. | Own | O41HV | 335 | 609 | CI | TX | 60¼ | 8⅛x2⅛x⅛ | P |
| 58 | .....WFMA38 | | 159 | 159 | 14000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | . | Eat | SFd | H | Dual Rge. | Own | O41H | 252 | 406 | CI | TX | 114 | 7⅛x2⅛x⅛ | ..... |
| 59 | .....WD20 | | 120 | 120 | 6400 | | 6.50/16▲ | 6.50/16 | Own | 6–3¼x4½ | 230 | 6.8 | 184 | 105–3600 | 4–2½x4¾ | N | NP | 3 | Own | HyF | H | 3.90–4.89 | Own | O41H | 190 | 293 | CI | TX | 44½ | 6½x2⅛x⅛ | ..... |
| 60 | .....WD21 | | 133 | 133 | 6400 | | 6.50/16▲ | 6.50/16 | Own | 6–3¼x4½ | 230 | 6.8 | 184 | 105–3600 | 4–2½x4¾ | N | NP | 3 | Own | HyF | H | 3.90–4.89 | Own | O41H | 190 | 293 | CI | TX | 57½ | 6½x2⅛x⅛ | ..... |
| 61 | .....WF33 | | 190 | 190 | 13500 | | 6.00/20‡ | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Own | HyF | H | 5.10–6.80 | Own | O41H | 252 | 406 | CI | TX | 114½ | 7⅛x2⅛x⅛ | ..... |
| 62 | .....WFA33 | | 190 | 190 | 14000 | | 6.00/20‡ | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Eat | SFd | H | Dual Rge. | Own | O41H | 252 | 406 | CI | TX | 114½ | 7⅛x2⅛x⅛ | ..... |
| 63 | .....WH46 | | 148 | 148 | 15000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Own | HyF | H | 5.10–7.10 | Own | O41HV | 335 | 609 | CI | TX | 72½ | 8⅛x2⅛x⅛ | ..... |
| 64 | .....WHA46 | | 148 | 148 | 16000 | | 6.50/20 | 8.25/20° | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Eat | SFd | H | Dual Rge. | Own | O41HV | 335 | 609 | CI | TX | 72½ | 8⅛x2⅛x⅛ | ..... |
| 65 | .....WHA47 | | 160 | 160 | 16000 | | 6.50/20 | 8.25/20° | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Eat | SFd | H | Dual Rge. | Own | O41HV | 335 | 609 | CI | TX | 84¼ | 8⅛x2⅛x⅛ | ..... |
| 66 | .....WH48 | | 178 | 178 | 15000 | | 6.50/20 | 8.25/20° | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Own | HyF | H | 5.10–7.10 | Own | O41HV | 335 | 609 | CI | TX | 102½ | 8⅛x2⅛x⅛ | ..... |
| 67 | .....WHA48 | | 178 | 178 | 16000 | | 6.50/20 | 8.25/20° | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Eat | SFd | H | Dual Rge. | Own | O41HV | 335 | 609 | CI | TX | 102½ | 8⅛x2⅛x⅛ | ..... |
| 68 | .....WH49 | | 220 | 220 | 15000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Own | HyF | H | 5.10–7.10 | Own | O41HV | 335 | 609 | CI | TX | 144½ | 8⅛x2⅛x⅛ | ..... |
| 69 | .....WHA49 | | 220 | 220 | 16000 | | 6.50/20 | 8.25/20° | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Eat | SFd | H | Dual Rge. | Own | O41HV | 335 | 609 | CI | TX | 144½ | 8⅛x2⅛x⅛ | ..... |
| 70 | .....WHM45 | | 105 | 105 | 15000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Own | HyF | H | 5.10–7.10 | Own | O41HV | 335 | 609 | CI | TX | 60 | 8⅛x2⅛x⅛ | ..... |
| 71 | .....WHMA45 | | 105 | 105 | 16000 | | 6.50/20 | 8.25/20° | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Eat | SFd | H | Dual Rge. | Own | O41HV | 335 | 609 | CI | TX | 60 | 8⅛x2⅛x⅛ | ..... |
| 72 | .....WHM48 | | 159 | 159 | 15000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Own | HyF | H | 5.10–7.10 | Own | O41HV | 335 | 609 | CI | TX | 114 | 8⅛x2⅛x⅛ | ..... |
| 73 | .....WHMA48 | | 159 | 159 | 16000 | | 6.50/20 | 8.25/20° | Own | 6–3⅞x4½ | 250 | 6.8 | 200 | 120–3800 | 4–2½x5⅛ | Y | NP | 5 | Eat | SFd | H | Dual Rge. | Own | O41HV | 335 | 609 | CI | TX | 114 | 8⅛x2⅛x⅛ | ..... |
| 74 | .....WFM35 | | 105 | 105 | 13500 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Own | HyF | H | 5.10–6.80 | Own | O41H | 252 | 406 | CI | TX | 60 | 7x2¼x⅜ | ..... |
| 75 | .....WFMA35 | | 105 | 105 | 14000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Eat | SFd | H | Dual Rge. | Own | O41H | 252 | 406 | CI | TX | 60 | 7x2¼x⅜ | ..... |
| 76 | .....WFM37 | | 129 | 129 | 13500 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Own | HyF | H | 5.10–6.80 | Own | O41H | 252 | 406 | CI | TX | 84 | 7⅛x2⅛x1¼ | ..... |
| 77 | .....WFMA37 | | 129 | 129 | 14000 | | 6.50/20 | 8.25/20 | Own | 6–3⅞x4¼ | 236 | 6.8 | 190 | 115–3800 | 4–2½x5⅛ | N | NP | 4 | Eat | SFd | H | Dual Rge. | Own | O41H | 252 | 406 | CI | TX | 84 | 7⅛x2⅛x1¼ | ..... |

x Weight of complete truck tractor less fifth wheel. □ Chevrolet own rear axle (6.17:1) available at extra cost on Models PJ-PK-PL. Chevrolet own 2-speed rear axle (6.03-7.99:1) available at extra cost on Models PVS-PWS-PR-PS-PV-PW. † Max. gross vehicle weight can only be obtained by adding regular productive options (at extra cost). [v] With Spi 703A with 3 forward speeds.
‡ Front only; Rear 6.50/20D ◆Or CBJXB 6–3⅝x4¼ * Rear 9.00/20D ▲ Rear 7.00/16S △ Front only; rear 10.00/20D


# The tires with built-in lightning rods

## *A typical example of B. F. Goodrich development in tires*

IN POWDER plants, distilleries, chemical plants, and similar installations, one tiny spark may cause a terrific explosion.

Trucks and trailers used for interplant hauling generate static electricity as they roll over the floors and runways. How to keep this electricity from building up to the point where it might cause an explosion was a difficult problem.

Truck builders and users came to B.F. Goodrich for help. They found that B.F. Goodrich research men had already developed special rubber compounds which made the rubber a conductor of electricity rather than an insulator. This material had been developed originally for use in airplane tires, meeting rigid Army and Navy specifications. (It has 20,000 times the ability of ordinary rubber to carry electricity.)

Used in industrial tires such as those shown above, this rubber allows the charge of static electricity that might build up to "bleed" from the truck to the floor. No sparks jump. Danger of explosions is reduced.

The development of this special compound for a specific purpose is typical of the B.F. Goodrich policy of continuing research. It has resulted in dozens of special tires for all sorts of uses ranging from coal mines to cane fields. It has resulted in constant improvement of tires for trucks, cars, airplanes, farm and industrial equipment. When you buy from the B.F. Goodrich dealer, you are assured of tires backed by this policy of constant improvement. *The B.F. Goodrich Company, Akron, Ohio.*

*Truck Tires* BY

**B.F. Goodrich**

| Line Number | MAKE AND MODEL | Chassis List Price | WHEEL-BASE Minimum Standard | WHEEL-BASE Maximum Standard | Gross Vehicle Weight for Normal Service | Chassis Weight (See definition) | TIRE SIZES D-dual rear S-single rear Standard Front and Rear | TIRE SIZES Maximum Authorized Tire Size (Duals unless noted) | ENGINE DETAILS Make and Model | No. of Cylinders, Bore and Stroke | Displacement | Comp. Ratio | Torque lb. ft. | Max. Brake H.P. at R.P.M. Given | Main Bearings Number, Diameter and Length | Governor Standard | TRANSMISSION Make and Model | TRANSMISSION Forward Sp'ds | REAR AXLE Make and Model | REAR AXLE Gear and Type | REAR AXLE Drive & Torque | REAR AXLE Gear Ratio Range in High | FRONT AXLE Make and Model | BRAKES SERVICE Make | BRAKES SERVICE Location Type Operat'n | BRAKES SERVICE Lining Area | BRAKES SERVICE Drum Area | BRAKES SERVICE Drum Material | BRAKES Hand Location Type | C-A Dimension (Min. Std. W. B.) | FRAME Side Rail Dimensions | FRAME Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Duplex.....T | ..... | 136 | 190 | 18000 | 6000 | 8.25/20 | 9.00/20 | Her JXD | 6-4x4¼ | 320 | 6.2 | 240 | 113–3000 | 7-2½x10‡‡ | Y | Fu 5B33 | 5 | Tim 56410 | 2F | H | ** –6.83 | Tim 32502 | L4IHV | 420 | 654 | A | TX | 59 | 9x3½x¼ | C |
| 2 | .....R | ..... | 142 | 190 | 25000 | 8820 | 9.00/20 | 10.00/20 | Her WXLC-3 | 6-4¼x4¼ | 404 | 5.8 | 290 | 139–2600 | 7-2½x13¼ | Y | Fu 5A43 | 4 | Tim 98415 | 2F | R | 6.53–8.53 | Tim 35000 | L4IHV | 730 | 1016 | A | TX | 79¼ | 9x3½x¼ | C |
| 3 | .....JH | ..... | 166 | 210 | 28000 | 9800 | 10.00/20D | 11.00/20 | Her RXB | 6-4½x5¼ | 501 | 5.4 | 360 | 121–2200 | 7-3x14 | Y | Fu 5A620 | 5 | Tim S-200P | 2F | R | ** –9.81 | Tim 26450 | Ws4IA | 912 | 1311 | A | TX | 79 | 10½x3½x¼ | C |
| 4 | .....KH | ..... | 166 | 210 | 32000 | 10500 | 11.00/20 | 11.00/20 | Her RXC | 6-4½x5¼ | 529 | 5.4 | 395 | 132–2200 | 7-3x14¼ | Y | Fu 5A620 | 5 | Tim U-200 | 2F | R | ** –9.81 | Tim 26450 | Ws4IA | 912 | 1311 | A | TX | 79 | 10½x3½x¼ | C |
| 5 | Federal.....18M | ..... | 146 | 194 | 15000 | 4700 | 8.25/20D | ..... | Her JXBF | 6-3¼x4¼ | 263 | 6.5 | 189 | 93–3000 | 7-2½x10‡‡ | N | WG T9 | 4 | Tim 54412DP | 3F | H | ** –5.83 | Tim 30003H | LT4IHV | 314 | 532 | a | TX | 67 | 8½x2¾x½ | T |
| 6 | .....18M2 | ..... | 146 | 194 | 15000 | 4830 | 8.25/20D | ..... | Her JXBF | 6-3¼x4¼ | 263 | 6.5 | 189 | 93–3000 | 7-2½x10‡‡ | N | WG T9 | 4 | Tim 94440DP | 4F | H | 6.06–8.11 | Tim 30003H | LT4IHV | 390 | 654 | a | TX | 67 | 8½x2¾x½ | T |
| 7 | .....29M | ..... | 146 | 194 | 20000 | 5500 | 9.00/20D | ..... | Her JXDF | 6-4x4¼ | 320 | 6.5 | 230 | 109–2800 | 7-2½x10‡‡ | N | Cla 205V | 5 | Tim 56410DP | 3F | H | ** –6.83 | Tim 32514H | LT4IHV | 390 | 654 | a | TX | 67 | 8½x2¾x½ | T |
| 8 | .....29M2 | ..... | 146 | 194 | 20000 | 5690 | 9.00/20D | ..... | Her JXDF | 6-4x4¼ | 320 | 6.5 | 230 | 109–2800 | 7-2½x10‡‡ | N | Cla 205V | 5 | Tim 96710DP | 3F | H | 6.07–8.12 | Tim 32514H | LT4IHV | 390 | 654 | a | TX | 67 | 8½x2¾x½ | T |
| 9 | .....29MA | ..... | 155 | 194 | 20000 | 5950 | 9.00/20D | ..... | Her JXDF | 6-4x4¼ | 320 | 6.5 | 230 | 109–2800 | 7-2½x10‡‡ | N | Cla 205V† | 5 | Tim 58301P | 3F | H | ** –6.83 | Tim 32514H | LT4IHV | 466 | 820 | a | TD | 67 | 8½x2¾x½ | T |
| 10 | .....45M | ..... | 143 | 203 | 24000 | 7975 | 10.00/20D | ..... | Con B6427 | 6-4¼x4¼ | 427 | 6.1 | 332 | 128–2600 | 7-2¾x13½ | Y | Cla 270VO | 5 | Tim 58301P | 3F | R | ** –6.83 | Tim 35011TW | TW4IA | 606 | 933 | a | TD | 60½ | 10x3½x¼ | T |
| 11 | .....45M2 | ..... | 143 | 203 | 24000 | 8350 | 10.00/20D | ..... | Con B6427 | 6-4¼x4¼ | 427 | 6.1 | 332 | 128–2600 | 7-2¾x13½ | Y | Cla 270VO | 5 | Tim 98415P | dF | R | 6.53–8.53 | Tim 35011TW | TW4IA | 722 | 1051 | a | TD | 60½ | 10x3½x¼ | T |
| 12 | .....55M | ..... | 143 | 203 | 27000 | 8600 | 11.00/20D | ..... | Con B6427 | 6-4¼x4¼ | 427 | 6.1 | 332 | 128–2600 | 7-2¾x13½ | Y | Cla 270V† | 5 | Tim S-200P | 2F | R | ** –7.08 | Tim 36021TW | TW4IA | 722 | 1051 | a | TD | 72½ | 10x3½x¼ | T |
| 13 | .....55MA | ..... | 155 | 203 | 27000 | 8880 | 11.00/20D | ..... | Con 22R | 6-4½x5¼ | 501 | 5.4 | 384 | 148–2400 | 7-2¾x14½ | Y | Cla 326V♦ | 5 | Tim S-200P | 2F | R | ** –7.08 | Tim 36021TW | TW4IA | 722 | 1051 | a | TD | 72½ | 10x3½x¼ | T |
| 14 | .....60MA | ..... | 155 | 203 | 28000 | 9715 | 11.00/20D | ..... | Con 22R | 6-4½x5¼ | 501 | 5.4 | 384 | 148–2400 | 7-2¾x14¼ | Y | Cla 326V | 5 | Tim S300P | dF | R | 6.53–8.53 | Tim 36021TW | TW4IA | 722 | 1051 | a | TD | 60½ | 10x3½x¼ | T |
| 15 | .....60M2 | ..... | 143 | 203 | 28000 | 9690 | 11.00/20D | ..... | Con 22R | 6-4½x5¼ | 501 | 5.4 | 384 | 148–2400 | 7-2¾x14¼ | Y | Cla 326V | | | | | | | | | | | | | | | |
| 16 | Ford Chs.Cowl 69C | ♦720 | 114 | 114 | 4700 | ♦2360 | 6.50/16 | 6.50/16 | Own 59C-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 21C | 3 | Own 21C | S¾ | H | ** –3.54 | Own 21Y | O41H | 162 | 264 | Co | 21M | ..... | 5.92x.15x2¼ | CT |
| 17 | Chs.Windsld 69C | ♦740 | 114 | 114 | 4700 | ♦2390 | 6.50/16 | 6.50/16 | Own 59C-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 21C | 3 | Own 21C | S¾ | H | ** –3.54 | Own 21Y | O41H | 162 | 264 | Co | 21M | ..... | 5.92x.15x2¼ | CT |
| 18 | Chassis Cab 69C | ♦780 | 114 | 114 | 4700 | ♦2710 | 6.50/16 | 6.50/16 | Own 59C-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 21C | 3 | Own 21C | S¾ | H | ** –3.54 | Own 21Y | O41H | 162 | 264 | Co | 21M | 40½ | 5.92x.15x2¼ | CT |
| 19 | Pickup.....69C | ♦800 | 114 | 114 | 4700 | ♦3050 | 6.50/16 | 6.50/16 | Own 59C-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 21C | 3 | Own 21C | S¾ | H | ** –3.54 | Own 21Y | O41H | 162 | 264 | Co | 21M | 40½ | 5.92x.15x2¼ | CT |
| 20 | Stake.....69C | ♦905 | 114 | 114 | 4700 | ♦3170 | 6.50/16 | 6.50/16 | Own 59C-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 21C | 3 | Own 21C | S¾ | H | ** –3.54 | Own 21Y | O41H | 162 | 264 | Co | 21M | ..... | 5.92x.15x2¼ | CT |
| 21 | Panel.....69C | ♦935 | 114 | 114 | 4700 | ♦3310 | 6.50/16 | 6.50/16 | Own 59A-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 21C | 3 | Own 21C | S¾ | H | ** –3.54 | Own 21A | O41H | 162 | 264 | Co | 21M | ..... | 5.92x.15x2¼ | xCT |
| 22 | Sedan Divry 69C | ♦990 | 114 | 114 | 4000 | ♦3050 | 6.00/16 | 6.50/16 | Own 59Y-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41A | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 23 | Chs. Cowl..69Y | ♦850 | 122 | 122 | 6600 | ♦2860 | 7.00/17▾ | 7.00/17▾ | Own 59Y-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 24 | Chs.Windsld 69Y | ♦870 | 122 | 122 | 6600 | ♦2890 | 7.00/17▾ | 7.00/17▾ | Own 59Y-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | 48½ | 6x.19x2¾ | CT |
| 25 | Chassis Cab 69Y | ♦945 | 122 | 122 | 6600 | ♦3220 | 7.00/17▾ | 7.00/17▾ | Own 59Y-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 26 | Express.....69Y | ♦1000 | 122 | 122 | 6600 | ♦3690 | 7.00/17▾ | 7.00/17▾ | Own 59Y-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 27 | Stake.....69Y | ♦1025 | 122 | 122 | 6600 | ♦3835 | 7.00/17▾ | 7.00/17▾ | Own 59Y-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 28 | Panel.....69Y | ♦1115 | 122 | 122 | 6600 | ♦3920 | 7.00/17▾ | 7.00/17▾ | Own 59Y-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 29 | Chs. Cowl..69T | ♦865 | 134 | 134 | 12500 | ♦3990 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 30 | Chs.Windsld 69T | ♦885 | 134 | 134 | 12500 | ♦4020 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 31 | Chassis Cab. 69T | ♦960 | 134 | 134 | 12500 | ♦4330 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 32 | Stake.....69T | ♦1095 | 134 | 134 | 12500 | ♦5310 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 11Y | 4 | Own 21Y | SF | H | ** –4.85 | Own 21Y | O41H | 187 | 308 | Co | 21M | ..... | 6x.19x2¾ | CT |
| 33 | Dump Chs. Cl. 69U | ♦♦873 | 134 | 134 | 12500 | ♦3990 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | ..... | 7x.21x2¾ | TL |
| 34 | Dump Chs.W's69U | ♦♦893 | 134 | 134 | 12500 | ♦4020 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | 60½ | 6.6x.12x2.2 | TL |
| 35 | Dump Chs. Cb. 69U | ♦♦968 | 134 | 134 | 12500 | ♦4335 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | ..... | 6.6x.12x2.2 | TL |
| 36 | Chs. Cowl..69T | ♦890 | 158 | 158 | 12500 | ♦4070 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | ..... | 6.6x.12x2.2 | TL |
| 37 | Chs.Windsld..69T | ♦910 | 158 | 158 | 12500 | ♦4100 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | ..... | 6.6x.12x2.2 | TL |
| 38 | Chassis Cab..69T | ♦985 | 158 | 158 | 12500 | ♦4410 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | 60½ | 6.6x.12x2.2 | TL |
| 39 | Stake.....69T | ♦1147 | 158 | 158 | 12500 | ♦5650 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | ..... | 6.6x.12x2.2 | TL |
| 40 | Sch. Bus...69T | ♦884 | 158 | 158 | 13500 | ♦4090 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | 84½ | 6.6x.12x2.2 | TL |
| 41 | Sch. Bus...694T | ♦995 | 194 | 194 | 14500 | ♦4260 | 7.50/20 | 8.25/20R | Own 594T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | ..... | 6.6x.12x2.2 | TL |
| 42 | (c.o.e.) Ch. C. 691W | ♦1085 | 101 | 101 | 13500 | ♦4435 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | ..... | 6.6x.12x2.2 | TL |
| 43 | (c.o.e.) Ch. C. 69W | ♦1105 | 134 | 134 | 13500 | ♦4570 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | 60 | 6.6x.12x2.2 | TL |
| 44 | (c.o.e.) Ch. C. 698W | ♦1130 | 158 | 158 | 13500 | ♦4645 | 7.50/20 | 8.25/20R | Own 59T-V8 | 8-3⅛x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.96 | N | Own 41T | 4 | Own 01T | SF | H | ** –6.66 | Own 01T | O41H | 303 | 506 | Co | TX | 93 | 7x.21x2¾ | TL |
| 45 | Hudson (¼T. Pkp) | ..... | 128 | 128 | 4810 | ..... | 6.50/16-6 | 6.50/16-6 | Own 58 | 6-3x5 | 212 | 6.5 | 168 | 102–4000 | 3– ▲▲ | N | Own | 4 | Own | S½ | H | ** –4.55 | Own | B4IH | 141 | 242 | C | 2I | 42½ | 7½x1¾x¼ | B |
| 46 | Intern'l (2)...K-1 | 690 | 113 | 125 | 4400 | 2250 | 6.00/16-4 | 7.00/16 | Own GRD214 | 6-3⅞x4½ | 213 | 6.3 | 160 | 82–3400 | 4–2½x6‡‡ | N | Own HDS | 3 | Own R1050 | S½ | H | 3.72–5.11 | Own F50 | L41H | 164 | 316 | c | FX | 38 | 6x2⅛x¼ | C |
| 47 | .....K-1-M | 700 | 102 | 113 | 4600 | 2150 | 6.00/16-4 | 6.50/16-6 | Own GRD214 | 6-3⅞x4½ | 213 | 6.3 | 160 | 82–3400 | 4–2½x6‡‡ | N | O 8A-HDS-A | 3 | Own R1050 | S½ | H | 3.72–5.11 | Own F150 | L41H | 164 | 316 | c | FX | 50 | 6x2⅛x¼ | C |
| 48 | .....K-2 | 695 | 125 | 125 | 5200 | 2285 | 6.00/16-4 | 7.00/16-6 | Own GRD214 | 6-3⅞x4½ | 213 | 6.3 | 160 | 82–3400 | 4–2½x6‡‡ | N | Own HDS-A | 3 | Own R1050 | S½ | H | 3.72–5.11 | Own F50 | L41H | 164 | 316 | c | FX | 50 | 6x2⅛x¼ | C |
| 49 | .....K-3 | 810 | 130 | ..... | 6650 | 2970 | 7.00/16-6 | 7.50/16-6 | Own GRD214 | 6-3⅞x4½ | 213 | 6.3 | 160 | 82–3400 | 4–2½x6‡‡ | N | Own H41B | 3 | Own R1050 | S½ | H | 3.72–5.11 | Own F150 | L41H | 195 | 367 | c | FX | 50 | 6x2⅛x¼ | C |
| 50 | .....K-3-M | ..... | 113 | 113 | 7000 | 2685 | 7.00/16-6 | 7.50/16-8 | Own GRD214 | 6-3⅞x4½ | 213 | 6.3 | 160 | 82–3400 | 4–2½x6‡‡ | N | Own H41B | 4 | Own R1150 | SF | H | 4.22–5.28 | Own F150 | L41H | 221 | 367 | c | TX | 60 | 6½x2¼x½ | C |
| 51 | (a)(b).....K-5 | 900 | 135 | 177 | 13500 | 3585 | 6.00/20D | 8.25/20 | O-GRD 233 | 6-3⅞x4½ | 233 | 6.3 | 181 | 93–3400 | 4–2½x6‡‡ | N | Own F51 | 4 | Own R1450 | SF | H | 5.62–7.16 | Own F470 | LH4IHV | 399 | 681 | c | TX | 60 | 8x3x¼ | T |
| 52 | (a)(b).....K-6 | 1315 | 134 | 176 | 14500 | 4475 | 6.50/20-6 | 8.25/20-10 | Own BLD250 | 6-3⅞x4½ | 269 | 6.3 | 222 | 100–3000 | 4–2.7x5‡‡ | N | Own F51 | 4 | Own R1450 | SF | H | 5.28–7.16 | Own F350 | LH4IHV | 368 | 633 | c | TX | 60 | 8¼x3x¼ | T |
| 53 | (a)(b).....K-7 | 1585 | 134 | 176 | 16500 | 4810 | 7.00/20D | 9.00/20 | O-BLD 269 | 6-3⅞x4½ | 251 | 6.3 | 200 | 100–3200 | 4–2½x5‡‡ | N | Own F51 | 5 | Own R1560 | SF | H | 5.62–7.16 | Own F470 | LH4IHV | 475 | 811 | c | TX | 60 | 8¼x3x¼ | T |
| 54 | (a)(b).....K-8 | 2400 | 137 | 197 | 20000 | 6155 | 7.50/20D | 10.00/20 | O-RED 361 | 6-4¼x4½ | 361 | 6.3 | 282 | 126–3000 | 7-3¼x10‡‡ | Y | Own F54 | 5 | Own R1670 | SF | H | 6.43–8.51 | Own F550 | LH4IHV | 552 | 654 | c | FX | 72 | 9¼x3½x¼ | T |
| 55 | (a)(b).....K-10 | ..... | 149 | 197 | 22500 | 7195 | 9.00/20 | 11.00/20 | Own RED401 | 6-4½x5 | 401 | 6.3 | 318 | 140–2800 | 7-3¼x10‡‡ | Y | Own F54 | 5 | Own R1700 | 2SF | H | 6.42–8.05 | Own F750 | WW4IA | 616 | 1030 | G | PX | 72 | 10x3½x¼ | T |
| 56 | (a)(b).....KR-11 | 4225 | 149 | 197 | 27000 | 8100 | 9.00/20D | 12.00/20 | O-RED 450 | 6-4½x5 | 450 | 6.3 | 360 | 148–2600 | 7-3¾x10‡‡ | Y | Own F54 | | | | | | | | | | | | | | | |
| 57 | Kenworth(D)..521 | ..... | 161 | 215 | 35000 | 12200 | 10.00/20 | 11.00/22 | Cum NHB6 | 6-5½x6 | 743 | 17. | 565 | 200–2100 | 7-4½x16½ | Y | BL 7841 | 4 | Tim U200P | DR | H | 6.42–7.84 | Tim 36000TW | Ws4IA | 1135 | ..... | ..... | ..... | ..... | ..... | 9½x3¾x¼ | ..... |
| 58 | (D).....522 | ..... | 187 | 245 | 43000 | 12900 | 10.00/20 | ..... | Cum HB6 | 6-4¾x6 | 672 | 17. | 500 | 150–1800 | 7-4½x16½ | Y | Fu 5A620 | 4 | Tim U200P | | | | Tim 36000TW | Ws4IA | 1135 | ..... | ..... | ..... | ..... | ..... | 9½x3¾x¼ | ..... |
| 59 | .....586 | ..... | 150 | 215 | 23000 | 10500 | 10.00/20 | ..... | Bu LO525 | 6-4½x5½ | 525 | 5.5 | 385 | 135–2200 | ..... | | | 5 | Tim 58415PA | | | | Tim 35100TW | Ws4IA | 672 | ..... | ..... | ..... | ..... | ..... | 9½x3¾x¼ | ..... |
| 60 | .....587 | ..... | 150 | 215 | 29000 | 10130 | 10.00/20 | ..... | Bu LO525 | 6-4½x5½ | 525 | 5.5 | 385 | 135–2200 | ..... | | | 5 | Tim U200P | | | | Tim 35100TW | Ws4IA | 752 | ..... | ..... | ..... | ..... | ..... | 9½x3¾x¼ | ..... |
| 61 | Reo.....19BHS | ..... | 145 | 145 | 14000 | 4349 | 8.25/20D | 8.25/20 | Own GC245 | 6-3½x4¼ | 245 | 6.2 | 191 | 89–3100 | 7-2⅛x10.6 | Y | Cla 185F | 4 | Tim 94427 | 2 | H | 6.06–8.12 | Tim 30000 | L4IHV | 327 | 478 | c | TX | 84 | 9x3x¼ | T |
| 62 | .....19BHS | ..... | 145 | 145 | 14000 | 4205 | 7.50/20D | 8.25/20 | Own GC245 | 6-3½x4¼ | 245 | 6.2 | 191 | 89–3100 | 7-2⅛x10.6 | Y | Cla 185F | 4 | Tim 54412 | SF | H | ** –6.8 | Tim 30000 | L4IHV | 327 | 478 | c | TX | 84 | 9x3x¼ | T |
| 63 | .....19CHS | ..... | 165 | 165 | 14000 | 4402 | 8.25/20D | 8.25/20 | Own GC245 | 6-3½x4¼ | 245 | 6.2 | 191 | 89–3100 | 7-2⅛x10.6 | Y | Cla 185F | 4 | Tim 54412 | SF | H | ** –6.8 | Tim 30000 | L4IHV | 327 | 478 | c | TX | 84 | 9x3x¼ | T |
| 64 | .....20BHS | ..... | 145 | 165 | 15500 | 5147 | 8.25/20D | 9.00/20 | Own GC288 | 6-3½x5 | 288 | 6.2 | 221 | 94–3000 | 7-2⅛x10.6 | Y | Cla 205V | 5 | Tim 56427 | SF | H | ** –6.16 | Tim 31104 | L4IHV | 402 | ..... | c | TX | 69¾ | 9½x3⅞x½ | T |
| 65 | .....20CHS | ..... | 165 | 165 | 15500 | 4985 | 8.25/20D | 9.00/20 | Own GC288 | 6-3½x5 | 288 | 6.2 | 221 | 94–3000 | 7-2⅛x10.6 | Y | Cla 205V | 4 | Tim 94427 | SF | H | ** –6.16 | Tim 31000 | L4IHV | 402 | ..... | c | TX | 70 | 9½x3⅞x½ | T |
| 66 | .....20XHS | ..... | 130 | 130 | 15500 | 4842 | 8.25/20D | 9.00/20 | Own GC288 | 6-3½x5 | 288 | 6.2 | 221 | 94–3000 | 7-2⅛x10.6 | Y | Cla 270V■ | 2 | | | H | 6.06–8.12 | Tim 31000 | Ws4IA | 476 | ..... | c | TX | 85 | 9½x3⅞x½ | T |
| 67 | .....25VBS | ..... | 145 | 145 | 24000 | 7655 | 10.00/20D | 10.00/20 | Con 6427 | 6-4¼x4¼ | 427 | 6.1 | 324 | 127–2600 | 7-2¼x11‡‡ | Y | Cla 270V | 5 | Tim S-200P | 2F | H | ** –7.84 | Tim 35000 | Ws4IA | 476 | ..... | c | TX | 85 | 9½x3⅞x½ | T |
| 68 | .....25VBS | ..... | 145 | 145 | 24000 | 7505 | 10.00/20D | 10.00/20 | Con 6427 | 6-4¼x4¼ | 427 | 6.1 | 324 | 127–2600 | 7-2¼x11‡‡ | Y | Cla 270VO | 5 | Tim 98415P | dF | R | 6.53–8.53 | Tim 35011TW | TW4IA | 722 | 1051 | a | TD | 72½ | 10x3½x¼ | T |
| 69 | .....25VXS | ..... | 130 | 130 | 24000 | 7445 | 10.00/20D | 10.00/20 | Con 6427 | 6-4¾x4¼ | 427 | 6.1 | 324 | 127–2600 | 7-2¼x11‡‡ | Y | Cla 270V | 5 | Tim S300P | dF | R | 6.53–8.53 | Tim 36021TW | TW4IA | 722 | 1051 | a | TD | 60½ | 10x3½x¼ | T |
| 70 | Sterling....HD115 | ..... | 155 | 185 | 32000 | 10200 | 10.00/20D | 11.00/20 | Con R6513 | 6-4½x5¼ | 513 | 5.9 | 400 | 156–2600 | 7-3¼x14½ | Y | Fu 5A625 | 5 | Tim S-200P | 2F | R | ** –7.84 | Rim 26450W | Ws4IA | 800 | 1286 | a | TX | 76 | 9x3¼x¼ | A |
| 71 | .....HC115 | ..... | 155 | 185 | 32000 | 10100 | 10.00/20D | 11.00/24 | Cum HB600 | 6-4¾x6 | 672 | 17. | 500 | 150–1800 | 7-4½x16½ | Y | Fu 5A625 | 15 | Tim 137W | C2 | R | 7.40–9.38 | Rim 26450W | Ws4IA | 726 | 1240 | a | TX | 76 | 9x3¼x¼ | A |
| 72 | (D).....HC115H | ..... | 176 | 211 | 32000 | 12000 | 10.00/20D | 11.00/24 | Wau 6SRKR | 6-4½x5½ | 517 | 5.5 | 369 | 125–2250 | 7-3x13¼ | Y | Fu 4B865 | 15 | Own 137W | C2 | R | 5.56–9.27 | Tim 26450W | Ws4IA | 726 | 1240 | a | TX | 88 | 9x3¼x¼ | A |
| 73 | .....HC144 | ..... | 155 | 175 | 36000 | 10500 | 10.00/22D | 12.00/24 | Wau 6SRKR | 6-4½x5½ | 517 | 5.5 | 369 | 125–2250 | 7-3x13¼ | Y | Fu 5A625 | 12 | Own 137W | C2 | R | 8.27–9.38 | Tim 26450W | Ws4IA | 786 | 1278 | a | TX | 76 | 9½x3½x3½ | A |

† Main transmission; auxiliary, Brown-Lipe 6031, 3 forward speeds.
* For other than minimum standard WB–8⅞x2⅛x¼.
▲▲ Diameter Front 2.343, Center 2.375, Rear 2.406. Total length–5.750.
♦ Main transmission; auxiliary, Brown-Lipe 703, 3 forward speeds.
‡ For other than minimum standard WB–10½x3½x¼.
■ Auxiliary transmission for logging operation
♦ Cab and body included
§ Equipped with 3 speed auxiliary transmission.
▾ Front only; rear 7.50/17.
‡‡ Includes $8.00 for spare wheel carrier on back of cab.

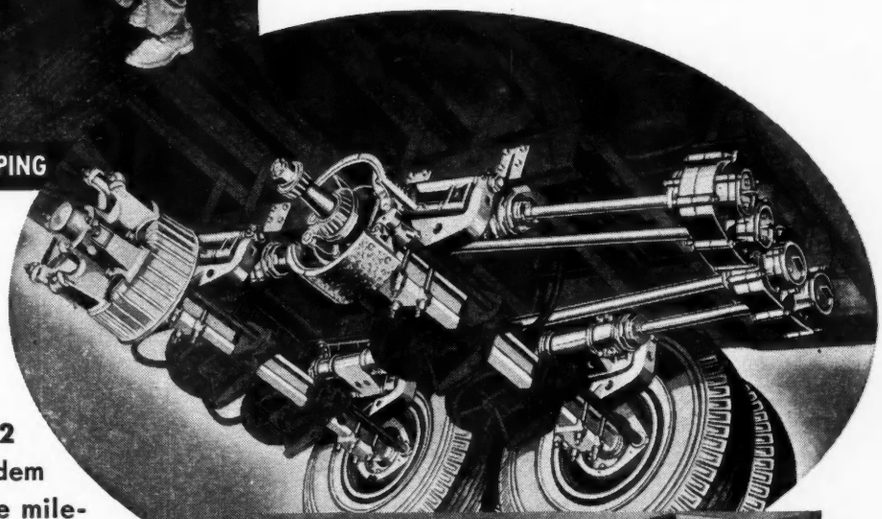
# USERS REPORT PHENOMENAL RESULTS WITH THE NEW FRUEHAUF GRAVITY SUSPENSION TANDEM

222,000 TIRE-MILES WITHOUT RECAPPING

Leo Cantlay, Fleet Superintendent, Western Truck Lines, Los Angeles, checks original set of tires used on their test unit, with Gravity Suspension Tandem axles. His notarized statement reveals 222,000 miles on the tires without recapping.

**Revolutionary Torsion Bar Assembly**

**• Eliminates Leaf Springs, Conventional Hangers and Radius Rods • Prolongs Tire Life Tremendously • Gives Sure Smooth Braking • Hugs the Road Safely • Lowers Maintenance Costs.**



**Actually road-tested for 2 years,** this new Fruehauf Tandem has delivered spectacular tire mileage. Operators who used the units under all road conditions say—Torsion Bar springing is perfect—Braking smooth and sure with no chatter or hop—Axles ride road contours and bumps independently, with unmatched "sure-footedness"—Axles follow the curves automatically on highway travel without tire scuffing—Maintenance costs, too, are negligible.

★ ★ ★

165,000 TIRE-MILES . . . MORE TO GO!

Six-wheel Tank-Trailer with Gravity Suspension Tandem has rolled up 165,000 miles in rugged West Coast oil haul. Original tires still good. Maintenance practically nothing.

*World's Largest Builders of Truck-Trailers*

**FRUEHAUF TRAILER CO., DETROIT 32**

*8 Factories—60 Factory Service Branches*

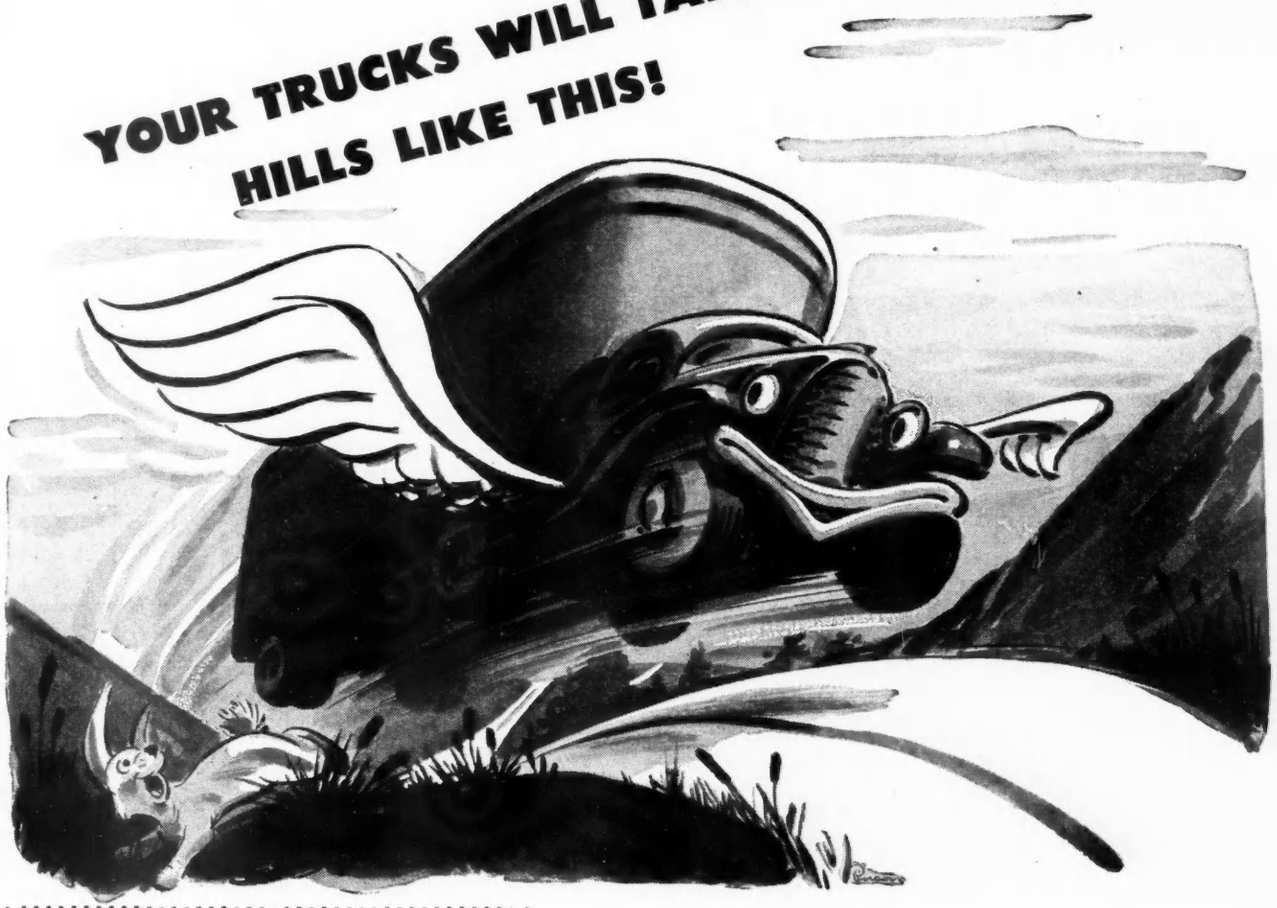
**GET COMPLETE DETAILS—SEND FOR "TANDEM BOOKLET" A "WORKING MODEL" DESCRIPTION**

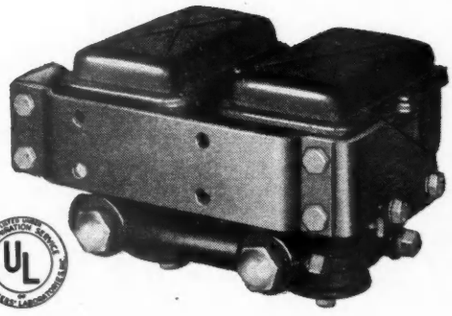
*Fruehauf Trailers* — A TRUCK IS LIKE A HORSE — IT CAN PULL MORE THAN IT CAN CARRY — *"Engineered Transportation"*

| Line Number | MAKE AND MODEL | Chassis List Price | WHEEL-BASE Minimum Standard | WHEEL-BASE Maximum Standard | Gross Vehicle Weight for Normal Service | Chassis Weight (See definition) | TIRE SIZES D-dual rear S-single rear Standard Front and Rear | TIRE SIZES Maximum Authorized Tire Size (Duals unless noted) | ENGINE DETAILS Make and Model | No. of Cylinders, Bore and Stroke | Displacement | Comp. Ratio | Torque lb. ft. | Max. Brake H.P. at R.P.M. Given | Main Bearings Number, Diameter and Length | Governor Standard | TRANSMISSION Make and Model | Forward Sp'ds | REAR AXLE Make and Model | Gear and Type | Drive & Torque | Gear Ratio Range in High | FRONT AXLE Make and Model | BRAKES SERVICE Make Location Type Operation | Lining Area | Drum Area | Drum Material | Hand Location Type | C-A Dimensions (Min. Std. W. B.) | FRAME Side Rail Dimensions | FRAME Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Sterling Cont'd | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | HC145 | | 155 | 175 | 36000 | 10500 | 10.00/22D | 12.00/24 | Wau 6SRKR | 6–4½x5½ | 517 | 5.5 | 369 | 125–2250 | 7–3x13¼ | Y | Fu 5A62½ | 15 | Own 146W | C2 | R | 8.27–9.38 | Tim 26450W | Ws4IA | 786 | 1278 | a | TX | 76 | 9¼x3½x¼ | A |
| 3 | HC147 | | 155 | | 36000 | 10900 | 10.00/22D | 12.00/24 | Wau 6SRKR | 6–4½x5½ | 517 | 5.5 | 369 | 125–2250 | 7–3x13¼ | Y | Fu 5A62½ | 15 | Own 147W | C2 | R | 8.27–9.38 | Tim 26450W | Ws4IA | 786 | 1278 | a | TX | 76 | 9¼x3½x¼ | A |
| 4 | HC156 | | 155 | | 40000 | 11900 | 11.00/24D | 12.00/24 | Wau 6SRKR | 6–4½x5½ | 517 | 5.5 | 369 | 125–2250 | 7–3x13¼ | Y | Fu 5A62½ | 15 | Own 156W | C2 | R | 8.18–9.27 | Tim 27454W | Ws4IA | 786 | 1270 | a | TX | 76 | 9¼x3½x¼ | A |
| 5 | HC165 | | 155 | | 40000 | 12000 | 11.00/24D | 12.00/24 | Wau 6SRKR | 6–4½x5½ | 517 | 5.5 | 369 | 125–2250 | 7–3x13¼ | Y | Fu 5A62½ | 15 | Own 165W | C2 | R | 8.18–9.27 | Tim 27454W | Ws4IA | 786 | 1270 | a | TX | 76 | 9¼x3½x¼ | A |
| 6 | (D) HC165H | | 165 | 175 | 40000 | 13500 | 11.00/24D | 12.00/24 | Cum HBD600 | 6–4⅞x6 | 672 | 17. | 500 | 150–1800 | 7–4½x16½ | Y | Fu 4B86½ | 12 | Own 165W | C2 | R | 8.18–9.27 | Tim 27454W | Ws4IA | 786 | 1270 | a | TX | 77 | 9¼x3½x½ | A |
| 7 | (D) HC175H | | 165 | 175 | 45000 | 14000 | 12.00/24D | 13.00/24 | Cum HBD600 | 6–4⅞x6 | 672 | 17. | 500 | 150–1800 | 7–4½x16½ | Y | Fu 4B86½ | 12 | Own 175W | C2 | R | 8.18–9.27 | Tim 27454W | Ws4IA | 786 | 1270 | a | TX | 77 | 9¼x3½x½ | A |
| 8 | Stewart 47B | | 134 | 205 | 13000 | 4900 | 6.50/20 | 8.25/20 | Wau 6BM | 6–3½x4¼ | 262 | 5.7 | 175 | 77–2800 | 7–2½x10¼ | N | WG T9 | 4 | Cla R950 | BF | H | 6.37–6.88 | Cla F268 | L4IHV | 285 | 512 | c | T | 54 | 8½x2¾x¼ | T |
| 9 | 49B | | 144 | 224 | 19500 | 5950 | 7.00/20 | 9.00/20 | Wau 6BZ | 6–4x4¼ | 318 | 5.7 | 10 | 86–3000 | 7–2½x10 | Y | Fu 5B330 | 5 | Tim 56400 | SF | R | 6.83–7.80 | Cla 450 | L4IHV | 408 | 742 | E | T | 64 | 10x2¾x | T |
| 10 | 58B | | 140 | 228 | 22000 | 7100 | 7.50/20 | 11.00/20 | Wau 6MZA | 6–4¼x4¾ | 404 | 5.3 | 300 | 105–2500 | 7–2½x12½ | Y | Fu 5B430 | 5 | Eat 1801 | SF | R | ** –7.16 | Tim 35000 | L4IHV | 478 | 848 | E | T | 64 | 10x2¾x | T |
| 11 | 59B | | 140 | 228 | 25000 | 7490 | 8.25/20 | 11.00/20 | Wau 6MZA | 6–4¼x4¾ | 404 | 5.3 | 300 | 105–2500 | 7–2½x12½ | Y | Fu 5B430 | 5 | Eat 2680 | 2F | R | ** –8.50 | Tim 35100 | L4IHV | 510 | 990 | E | T | 64 | 10x2¾x | T |
| 12 | 38B | | 140 | 228 | 27000 | 8250 | 9.00/20 | 11.00/20 | Wau 6SRKR | 6–4½x5½ | 517 | 5.5 | 369 | 110–2400 | 7–3x13¼ | Y | Fu 5A620 | 5 | Tim 200V | 2F | R | 7.37–8.64 | Eat 570 | L4IHV | 510 | 990 | E | T | 64 | 10x2¾x | T |
| 13 | Studebaker M5 | | 113 | 113 | 4500 | 2135 | 6.50/16S | 6.50/16S | Own 1M | 6–3x4 | 170 | 6.5 | 134 | 80–4000 | 4–2x5 | N | Own 664949 | 3 | Own 663597 | Hy | H | ** –4.82 | Own 664307 | L4IH | 157 | 276 | Co | 2I | 45 | 7x2x | T |
| 14 | M15A-20 | | 120 | 120 | 7800 | 2850 | 7.00/17S | 7.50/17 | Own 2M | 6–3x4 | 170 | 6.5 | 134 | 80–4000 | 4–2x5 | N | Own 673674 | 4 | Own 664435 | SF | H | 5.66–6.60 | Own 673625 | L4IH | 216 | 342 | a | TX | 52 | 7x2x | T |
| 15 | M15A-28 | | 128 | 128 | 10000 | 3085 | 7.50/17S | 7.00/20 | Own 2M | 6–3x4 | 170 | 6.5 | 134 | 80–4000 | 4–2x5 | N | Own 673674 | 4 | Own 665174 | SF | H | 6.60–5.66 | Own 673625 | L4IH | 216 | 342 | a | TX | 52 | 8x2x | T |
| 16 | M16 | | 128 | 195 | 13500 | 3685 | 7.00/20D | 8.25/20 | Own 3M | 6–3x4½ | 226 | 6.5 | 176 | 94–3600 | 4–2½x5 | N | Own 674989 | 4 | Own 665171 | SF | H | 5.66–6.66 | Own 664452 | L4IH | 280 | 442 | Co | TX | 60 | 8½x2x | T |
| 17 | (2 spd. R.axle) M16 | | 128 | 195 | 15000 | 3850 | 7.00/20D | 8.25/20 | Own 3M | 6–3x4½ | 226 | 6.5 | 176 | 94–3600 | 4–2½x5 | Y | Own 674989 | 4 | Own 674681 | SF | H | Dual Rge. | Own 664452 | L4IH | 280 | 442 | Co | TX | 60 | 8½x2x | T |
| 18 | Truckstell(C) F18-5 | | 140 | 194 | 18500 | ▲5265 | 7.50/20° | 10.00/20 | Ford | 8–3⅞x3¾ | 239 | 6.4 | 180 | 100–3800 | 3–2½x4.71 | N | Ford | 12 | Cla R1300 | SF | H | 5.67–6.83 | Ford | L4IHV | 355 | 610 | a | TX | 65¾ | 7½x3x.47 | CTf |
| 19 | (C) F19-5-0 | | 108 | 166 | 19500 | ▲5265 | 7.50/20° | 10.00/20 | Ford | 8–3⅞x3¾ | 239 | 6.7 | 180 | 100–3800 | 3–2½x4.71 | N | Ford | 12 | Cla R1300 | SF | H | 5.67–6.83 | Ford | L4IHV | 355 | 610 | a | TX | 65¾ | 7½x3x.47 | CTf |
| 20 | (C) C18-5 | | 144 | 197 | 18500 | ▲5395 | 7.50/20° | 10.00/20 | Chevrolet | 6–3⅞x3½ | 235 | 6.6 | 192 | 93–3100 | 4–2¾x5 | N | Chev & BL | 12 | Cla R1300 | SF | H | 5.67–6.83 | Chevrolet | L4IHV | 355 | 610 | a | TD | 67 | 7½x3x.47 | CTf |
| 21 | (C) C19-5-0 | | 114 | 173 | 19500 | ▲5395 | 7.50/20° | 10.00/20 | Chevrolet | 6–3⅞x3½ | 235 | 6.6 | 192 | 93–3100 | 4–2¾x5 | N | Chev & BL | 12 | Cla R1300 | SF | H | 5.67–6.83 | Chevrolet | L4IHV | 355 | 610 | a | TD | 67 | 7½x3x.47 | CTf |
| 22 | Ward La Fr. D-1 | | 149 | 220 | 25000 | 9500 | 10.00/20 | 10.00/20 | Con B6427 | 6–4⅛x4¼ | 427 | 6.1 | 325 | 127– | 7–2¾x13½ | Y | Fu 5A430 | 5 | Tim 58415PA | B | R | ** –6.14 | Tim 35011TW | Ws4A | 600 | 928 | c | TM | 68¼ | 9¾x3x¼ | |
| 23 | D-1B | | 149 | 220 | 25000 | 9500 | 10.00/20 | 11.00/20 | Con 22R | 6–4½x5¼ | 501 | 5.4 | 384 | 148– | 7–2⅝x14½ | Y | Fu 5A620 | 5 | Tim 58415PA | B | R | ** –6.14 | Tim 35011TW | Ws4A | 600 | 928 | c | TM | 68¼ | 9¾x3x¼ | |
| 24 | D-1C | | 149 | 220 | 29000 | 9500 | 11.00/20 | 11.00/24 | Con B6427 | 6–4⅛x4¼ | 427 | 6.1 | 325 | 127– | 7–2¾x13½ | Y | Fu 5A430 | 5 | Tim S-200P | S2 | R | ** –7.84 | Tim 35011TW | Ws4A | 673 | 1031 | c | TM | 68¼ | 9¾x3x¼ | |
| 25 | D-2 | | 149 | 220 | 29000 | 12000 | 11.00/20 | 11.00/24 | Con R6513 | 6–4⅝x5½ | 513 | 5.9 | 405 | 180– | 7–3¼x14½ | Y | Fu 5A620 | 5 | Tim S-200P | S2 | R | ** –7.84 | Tim 35011TW | Ws4A | 673 | 1031 | c | TM | 68¼ | 10x3x | |
| 26 | D-3 | | 149 | 220 | 30000 | 12000 | 11.00/22 | 12.00/24 | Con R6572 | 6–4¾x5¾ | 572 | 5.9 | 454 | 198– | 7–3¼x14½ | Y | Fu 5A650 | 5 | Tim U200P | S2 | R | ** –7.84 | Tim 26458W | Ws4A | 750 | 1159 | c | TM | 68¼ | 10x3x | |
| 27 | (D) D-5 | | 155 | 226 | 35000 | 12500 | 11.00/22 | 12.00/24 | Cum HB600 | 6–4⅞x6 | 672 | 17. | 500 | 150– | 7–4½x16¾ | Y | Own M | 10 | Tim U200P | S2 | R | ** –6.42 | Tim 26458W | Ws4A | 750 | 1159 | c | TM | 68¼ | 10x3x | |
| 28 | FD-0 | | 186 | | | 12000 | 11.00/20 | 11.00/24 | Con 22R | 6–4½x5¼ | 501 | 5.4 | 384 | 148– | 7–2⅝x14½ | Y | Fu 5A620 | 5 | Tim R3100W | S2 | R | ** –8.15 | Tim F3100W | Ws4A | 627 | 1029 | c | TM | 99¾ | 9¼x3x | |
| 29 | FD-1 | | 186 | | 37000 | 12000 | 11.00/20 | 11.00/24 | Con R6602 | 6–4½x5¾ | 602 | 6.2 | 472 | 206– | 7–3¼x14½ | Y | Fu 5A650 | 5 | Tim R462W | S2 | R | ** –8.15 | Tim F3100W | Ws4A | 627 | 1029 | c | TM | 99¾ | 10x3x | |
| 30 | (D) FD-2 | | 186 | | 37000 | 12500 | 11.00/22 | 11.00/24 | Cum HB600 | 6–4⅞x6 | 672 | 17. | 500 | 150– | 7–4½x16¾ | Y | Fu 5A920 | 5 | Tim R462W | S2 | R | ** –8.15 | Tim F3100W | Ws4A | 627 | 1029 | c | TM | 99¾ | 10x3x | |
| | **Four-Wheel-Drive** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Corbitt 18FG | | Opt | Opt | 18000 | 6600 | 8.25/20 | 9.00/20 | Con M6330 | 6–4x4¾ | 330 | 5.7 | 240 | 102–2800 | 7–2⅝x12 | Y | Fu 5A33 | 5 | Tim 56410H | SF | H | ** –6.83 | Tim F35H | L4IHV | .... | 578 | a | TD | Opt | 8x3¼x¼ | T |
| 32 | 22FG | | 159 | Opt | 22000 | ..... | 9.00/20 | 10.00/20 | Con B6371 | 6–4½x4¾ | 371 | 5.7 | 280 | 100–2500 | 7–2½x13½ | Y | Fu 5A43 | 5 | Tim R2090H | 2F | H | ** –8.43 | Tim F2090H | L4IHV | .... | 868 | a | TD | 74 | 9x3x¼ | T |
| 33 | 25FG | | Opt | Opt | 25000 | ..... | 10.00/22 | 11.00/22 | Con R6513 | 6–4½x5½ | 513 | 5.9 | 400 | 165–2600 | 7–3¼x14½ | Y | Fu 5A62 | 5 | Tim R3100W | 2F | H | ** –8.14 | Tim F3100W | Ws4IA | .... | 1030 | a | TD | Opt | 10½x3x¼ | Tf |
| 34 | 28FG | | Opt | Opt | 28000 | ..... | 11.00/22 | 11.00/24 | Con R6602 | 6–4½x5¾ | 602 | 6.0 | 460 | 185–2600 | 7–3¼x14½ | Y | Fu 5A65 | 5 | Tim R462W | 2F | H | ** –8.14 | Tim F3100W | Ws4IA | .... | 1030 | a | TD | Opt | 10½x3x¼ | Tf |
| 35 | FWD HA | | 144 | 156 | 17000 | ▲7470 | 8.25/20D | 10.00/20 | Wau BZ | 6–4x4¼ | 320 | 5.9 | 223 | 95–2800 | 7–2½x10¼ | Y | Own H | 5 | Own H | SF | H | 6.6 –9.06 | Own H | L4IHV | 391 | 807 | a | T4 | 79½ | 9x3x¼ | T |
| 36 | HR | | 144 | 156 | 20000 | ▲8000 | 9.00/20 | 10.00/20 | Wau MZR | 6–4¼x4¾ | 404 | 5.7 | 270 | 98–2500 | 7–2½x12⅝ | Y | Own H | 5 | Own H | SF | H | 6.6 –9.06 | Own H | L4IHV | 391 | 807 | a | T4 | 79½ | 9x3x¼ | T |
| 37 | HG | | 154 | 154 | 20000 | ▲8050 | 9.00/20 | 10.00/20 | Wau MZR | 6–4¼x4¾ | 404 | 5.7 | 270 | 98–2500 | 7–2½x12⅝ | Y | Own H | 5 | Own H | SF | H | 6.6 –9.06 | Own H | L4IHV | 391 | 807 | a | T4 | 89¾ | 7x3x | C |
| 38 | 8U | | 150 | 150 | 25000 | ▲10420 | 11.00/20D | 12.00/20 | Wau SRKR | 6–4⅝x5½ | 517 | 5.5 | 365 | 126–2400 | 7–3x13¾ | Y | Own U | 5 | Own U | BF | H | 6.7 –9.8 | Own U | L4IHV | 496 | 867 | a | T4 | 90 | 7x3x | C |
| 39 | M7 | | 150 | 150 | 38600 | ▲15400 | 12.00/20D | 12.00/20 | Wau 145GK | 6–5¼x6 | 779 | 6.2 | 585 | 186–2000 | 7–3½x17¾ | Y | Own M | 10 | Tim 1758 | 2F | H | ** –7.53 | Wis F409 | Ws4IA | 578 | 976 | a | T4 | 90 | 10x3x | C |
| 40 | (D) M7 | | 150 | 150 | 38600 | ▲15700 | 12.00/20D | 12.00/20 | Cum HB600 | 6–4⅞x6 | 672 | 17. | 500 | 150–1800 | 7–4½x16¾ | Y | Own M | 10 | Tim 1758 | 2F | H | ** –7.53 | Wis F409 | Ws4IA | 578 | 976 | a | T4 | 90 | 10x3x | C |
| 41 | Marmon-Herr. MH440-4 | | 158 | 170 | 20700 | ▲8700 | 9.00/20D | 10.00/20 | Her WXLC3 | 6–4¼x4¾ | 404 | 5.4 | 293 | 118–2800 | 7–2⅝x8¾ | Y | Fu 5A430 | 5 | Tim R2090W | 2B | H | ** –8.43 | Tim F2090W | W....A | 584 | 887 | c | F | 72 | 9x3x¼ | T |
| 42 | MH555-4 | | 161 | 173 | 24000 | ▲10200 | 10.00/20D | 11.00/20 | Her RXC | 6–4⅝x5¼ | 529 | 6.3 | 390 | 131–2200 | 7–3x9¼ | Y | Fu 5A620 | 5 | Tim R3100W | 2B | H | ** –8.15 | Tim F3100W | W....A | 692 | 1039 | c | F | 72 | 10x3x | T |
| 43 | (C) CMM5-4 | | 134 | 134 | 13500 | ▲4847 | 7.50/20D | 7.50/20 | Ford | 8–3⅛x3¾ | 239 | 6.4 | 176 | 100–3500 | 3–2½x4.71 | N | Ford | 4 | Ford | S | H | ** –6.67 | Own M5 | F....H | 302 | 563 | a | F | 60 | 7x2¾x | T |
| 44 | (C) CMM6-4 | | 158 | 158 | 13500 | 4973 | 7.50/20D | 7.50/20 | Ford | 8–3⅛x3¾ | 239 | 6.4 | 176 | 100–3500 | 3–2½x4.71 | N | Ford | 4 | Ford | S | H | ** –6.67 | Own M5 | F....H | 303 | 563 | a | F | 84 | 7x2¾x | T |
| 45 | DVL-1 | | 90 | 118 | 8500 | 4300 | 7.50/16S | 8.25/18S | Willys MB | 4–3¼x4¼ | 134 | 6.4 | 105 | 60–4000 | 3–2.33x5.48 | Y | Own | 3 | None | | | .....7.10 | Own | 4IH | 202 | 3x7 | M2 | | | | |
| 46 | Oshkosh W-307 | | 149 | 204 | 23600 | 10200 | 10.00/20 | 11.00/20 | Her WXLC3 | 6–4¼x4¾ | 404 | 6.3 | 310 | 118–2500 | 7–2⅝x13¾ | Y | Fu 5A43 | 5 | Tim 58300 | SF | H | ** –7.8 | Own W307 | L4II | 560 | 867 | G | TX | 82 | 8¼x3x¾ | TF |
| 47 | W-700 | | 150 | 204 | 30000 | ▲12000 | 11.00/20 | 12.00/20S | Her RXCO | 6–4⅝x5¼ | 529 | 5.4 | 380 | 128–2200 | 7–3x12¾ | Y | Fu 5A620 | 5 | Own W700 | 2F | H | ** –6.6 | Own W700 | L4IH | 630 | 975 | G | TX | 82 | 10½x3x¾ | TF |
| 48 | W-703 | | 150 | 204 | 30000 | ▲12200 | 11.00/20 | 12.00/20S | Her RXLD | 6–4¾x5¼ | 558 | 5.4 | 405 | 141–2200 | 7–3½x13¼ | Y | Fu 5A620 | 5 | Own W700 | 2F | H | ** –6.6 | Own W700 | L4IH | 630 | 975 | G | TX | 82 | 10½x3x¾ | TF |
| 49 | (D) W-906 | | 158 | 190 | 38000 | ▲14900 | 12.00/20 | 14.00/20S | Cum HB600 | 6–4½x6 | 672 | ..... | 500 | 150–1800 | 7–4½x16 | Y | Fu 4A86 | 4 | Own W906 | 2F | H | ** –6.2 | Own W906 | LT4IWS | 645 | 975 | G | TX | 90 | 10¼x3x¾ | TF |
| 50 | Peterbilt(D) 270DD | 8950 | 165 | Opt | 27000 | 12500 | 10.00/20D | 11.00/22 | Cum HB600 | 6–4⅞x6 | 672 | 17. | 500 | 150–1800 | 7–4½x16½ | Y | Spi 7741 | 12 | U-200P | 2F | R | ** –6.42 | Tim 36000W | Ws4IA | 800 | 1250 | a | FD | 80½ | 10⅝x3½x⅝ | TL |
| 51 | Walter(c.f.) FN | | 126 | 150 | 20000 | 7500 | 9.00/20D | 10.00/20S | Wau MZR | 6–4¼x4¾ | 404 | 5.6 | 290 | 100–2500 | 7–2½x12½ | Y | Own FN | 6 | Own FNB | 2 | H | 6.0–8.0 | Own FN | O4IA | 470 | 670 | G | FI | 84 | 7x2¾x¼ | C |
| 52 | (c.f.) FZM | | 126 | 150 | 24000 | 8500 | 10.00/20D | 12.00/20S | Wau MZR | 6–4¼x4¾ | 404 | 5.6 | 290 | 100–2500 | 7–2½x12½ | Y | Own FN | 6 | Own FMB | 2 | H | 6.0–8.0 | Own FJ | O4IA | 470 | 670 | G | FI | 84 | 12x3½x½ | B |
| 53 | (c.f.) FKM | | 126 | 150 | 24000 | 9000 | 10.00/20D | 12.00/20S | Wau SRKR | 6–4½x5½ | 517 | 5.3 | 365 | 125–2200 | 7–3x13¾ | Y | Own FJD | 6 | Own FMB | 2 | H | 6.0–8.0 | Own FJ | O4IA | 470 | 670 | G | FI | 84 | 12x3½x½ | B |
| 54 | (c.f.) FCK | | 126 | 138 | 30000 | 10500 | 10.00/24D | 11.00/24S | Wau SRKR | 6–4½x5½ | 517 | 5.5 | 365 | 125–2200 | 7–3x13¾ | Y | Own FC | 6 | Own FCB | 2 | H | 7.5–9.0 | Own FC | O4IA | 585 | 890 | D | FI | 84 | 13x3¾x½ | B |
| 55 | (c.f.) FC | | 138 | 162 | 32000 | 11000 | 11.00/24D | 12.00/24S | Wau SRKR | 6–4⅝x5½ | 517 | 5.5 | 365 | 125–2200 | 7–3x13¾ | Y | Own FC | 6 | Own FCB | 2 | H | 7.5–9.0 | Own FCR | O4IA | 585 | 890 | D | FI | 96 | 14x3¾x½ | B |
| 56 | (c.f.) FCR | | 126 | 162 | 42000 | 12000 | 12.00/24D | 12.00/24 | Wau SRKR | 6–4½x5½ | 517 | 5.5 | 365 | 125–2200 | 7–3x13¾ | Y | Own FC | 6 | Own FCR | 2 | H | 7.5–9.0 | Own FCR | O4IA | 585 | 890 | D | FI | 84 | 14x3¾x½ | B |
| 57 | (c.f.) FGB | | 126 | 162 | 32000 | 12000 | 11.00/24D | 12.00/24S | Wau 145GK | 6–5¼x6 | 779 | 5.7 | 580 | 175–2000 | 7–3½x17¾ | Y | Own FA | 6 | Own FCB | 2 | H | 7.5–9.0 | Own FCR | O4IA | 585 | 890 | D | FI | 84 | 14x3¾x½ | B |
| 58 | (c.f.) FGR | | 126 | 162 | 42000 | 13000 | 12.00/24D | 12.00/24 | Wau 145GK | 6–5¼x6 | 779 | 5.7 | 580 | 175–2000 | 7–3½x17¾ | Y | Own FA | 6 | Own FCR | 2 | H | 7.5–9.0 | Own FCR | O4IA | 585 | 890 | D | FI | 89 | 14x3¾x½ | B |
| 59 | Willys | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | Unv. Jp. CJ-2A | *1090 | 80 | 80 | 2937 | †1646 | 6.00/16 | 7.00/15 | Own CJ-2A | 4–3½x4½ | 134 | 6.4 | 105 | 60–4000 | 3–2.33x5.48 | N | WG T90A | 3 | Spi 41-2 | Hy | H | ** –5.38 | Spi 25 | B4H | 118 | 520 | a | F | 80 | 4x1¼x | P |

§ Equipped with 3 speed auxiliary transmission. ▲ Includes cab ° Rear 8.25/20 * Vehicle Price without Federal Tax, at Toledo † With Power Take-off.

# YOUR TRUCKS WILL TAKE HILLS LIKE THIS!





**30% More Gas on One Pump Alone in Dual Installation!**

Where gas requirements are high, install Stewart-Warner Dual Electric Fuel Pumps. This combination more than doubles the life of each pump. Duals can be installed a variety of ways to operate independently so that one pump operating alone assures 30% more gas than normal single unit installation. The second becomes a safety pump in case of emergency.

## . . . or so it will seem with

# STEWART-WARNER

## ELECTRIC FUEL PUMPS

- **No vapor-lock.**
- **No fuel pump failure.**
- **No engine gasping for gas.**
- **Pump operates only when needed.**
- **Delivers 15 gallons per hour on an average of one ampere of current.**

Constant pressure pushes gas to the carburetor. No vapor pocket can form. What's more, a Stewart-Warner Electric Fuel Pump is a "smooth operator"—lasts long—doesn't pulsate or "beat itself to death." The diaphragm of Du Pont Fairprene simply can't wear out. No rotating parts, no piston, no bearings to fail.

The contact points are sealed in a hydrogen tube and are operated and controlled magnetically. Bears the seal of Underwriters' Laboratories.

For more efficient, more profitable truck operation, install Stewart-Warner Electric Fuel Pumps as replacements or as auxiliary "safety" pumps for heavy-duty operation. Stewart-Warner Corporation, 1876 Diversey Parkway, Chicago 14, Illinois.

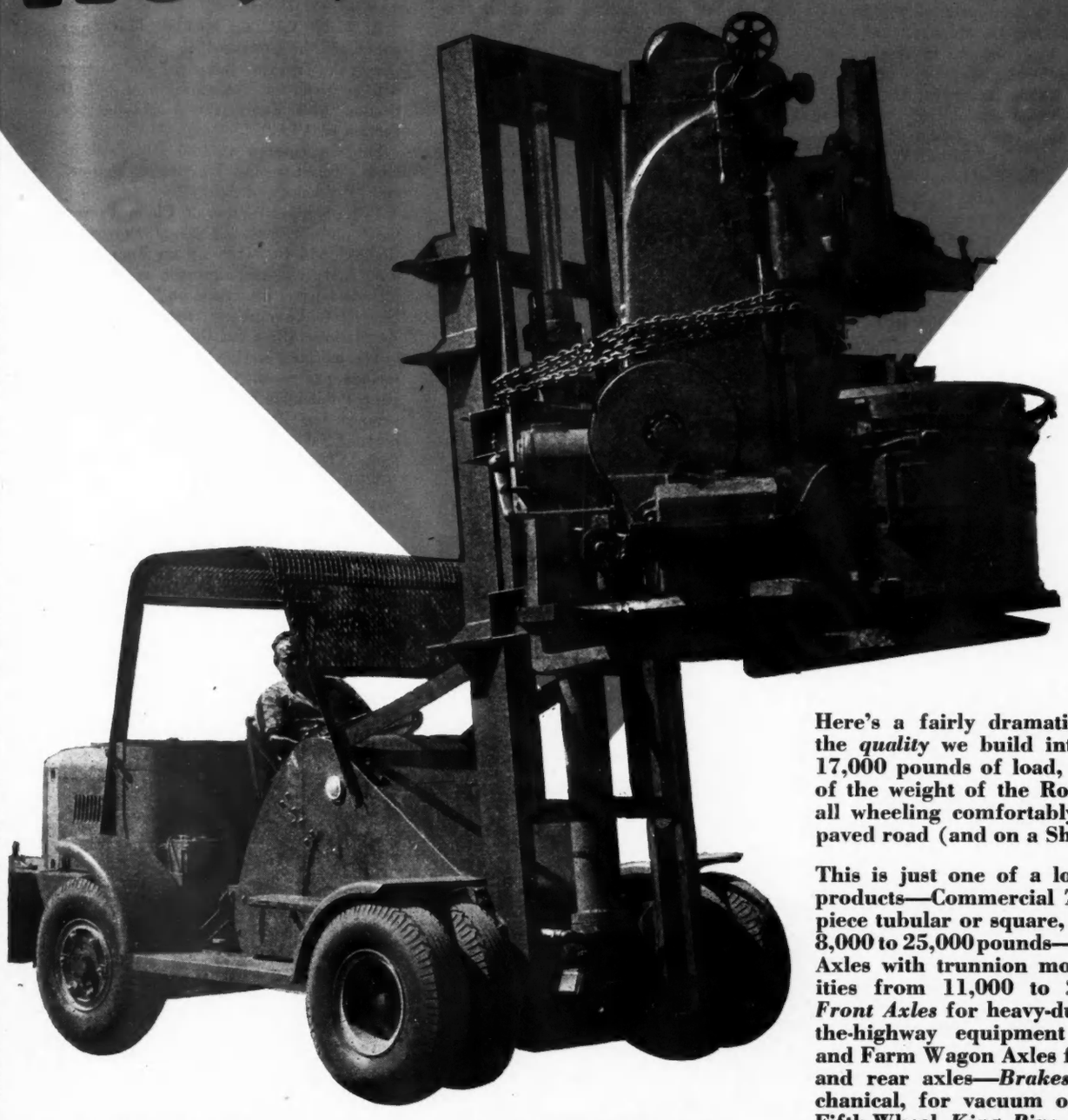
**STEWART-WARNER**
**ELECTRIC FUEL PUMP**

Another Product of STEWART WARNER

| Line Number | MAKE AND MODEL | Chassis List Price | WHEEL-BASE Minimum Standard | WHEEL-BASE Maximum Standard | Gross Vehicle Weight for Normal Service | Chassis Weight (See definition) | TIRE SIZES D-dual rear S-single rear: Standard Front and Rear | TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted) | ENGINE DETAILS: Make and Model | No. of Cylinders, Bore and Stroke | Displacement | Comp. Ratio | Torque lb. ft. | Max. Brake H.P. at R.P.M. Given | Main Bearings: Number, Diameter and Length | Governor Standard | TRANSMISSION: Make and Model | Forward Sp'ds | REAR AXLE: Make and Model | Gear and Type | Drive & Torque | Gear Ratio Range in High | FRONT AXLE: Make and Model | BRAKES SERVICE: Make Location Type Operat'n | Lining Area | Drum Area | Drum Material | Hand Location Type | C-A Dimensions (Min. Std. W. B.) | FRAME: Side Rail Dimensions | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Six-Wheelers** Wheels Driven ▼ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Corbitt.....35RG | | Opt | Opt | 35000 | ..... | 10.00/20 | 10.00/22 | Con B6427 | 6-4⅛x4½ | 427 | 6.1 | 332 | 127-2600 | 7-2⅛x13½ | Y | Fu 5A43 | 5 | T SBD1500PA | SF | L | ** -6.44 | Tim 35000TW | Ws6IA | .... | 1094 | a | TX | Opt | 10½x3x¼ | Tf |
| 2 | .....40RG | | Opt | Opt | 40000 | ..... | 10.00/22 | 11.00/22 | Con R6602 | 6-4⅛x5½ | 602 | 6.0 | 460 | 185-2600 | 7-3¼x14½ | Y | Fu 5A65 | 5 | T SDD3000PA | 2F | L | ** -6.84 | Tim 35100TW | Ws6IA | .... | 1567 | a | TD | Opt | 12¼x3¼x⅜ | T |
| 3 | .....40SG | | Opt | Opt | 40000 | ..... | 10.00/20 | 10.00/20 | Con R6513 | 6-4½x5½ | 513 | 5.9 | 400 | 165-2600 | 7-3¼x14½ | Y | Fu 5A62 | 10 | T SFD154W | 2F | L | -8.43 | Tim F2090W | Ws6IA | .... | 1302 | a | TD | Opt | 10½x3x¼ | Tf |
| 4 | .....508D6 | | Opt | Opt | 50000 | ..... | 10.00/22 | 11.00/22 | Her HXD | 6-5½x6 | 855 | ... | 645 | 203-2100 | 7-3½x17 | Y | Fu 4A86 | 8 | T SD353W | 2F | L | ** -7.33 | Tim F3100W | Ws6IA | .... | 1626 | a | TD | Opt | 10½x3x¼ | Tf |
| 5 | Diamond T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | ...9008D3010PA | | 204 | 204 | 40000 | 13750 | 10.00/22D | 10.00/22 | Her RXLC | 6-4⅝x5¼ | 529 | 5.4 | 365 | 132-2100 | 7-3½x13¼ | Y | Spl 6241, 703 | 12 | T SD3010PA | 2F | R | ** -7.50 | Tim 36021TW | Ws6IA | 1082 | .... | A | TD | 134 | 10½x3½x⅜ | T |
| 7 | (D)9108W3012PA | | 206 | 206 | 40000 | 15100 | 10.00/22D | 10.00/22 | Cum HB-600 | 6-4½x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16⅜ | Y | Spl 7851, 703 | 15 | T SW3012PA | 2F | R | ** -6.07 | Tim 36021TW | Ws6IA | 1082 | .... | A | TD | 124 | 10½x3½x⅜ | T |
| 8 | .(D)9108D462W | | 206 | 206 | 50000 | 16300 | 11.00/22D | 11.00/22 | Cum HB600 | 6-4½x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16¾ | Y | Spl 7851, 703 | 15 | T SD462W | 2F | R | ** -8.15 | Tim 36021TW | Ws6IA | 1014 | .... | A | TD | 124 | 10½x3½x⅜ | T |
| 9 | F.W.D.....M6x6 | | 243 | 276 | 58000 | ▲21400 | 11.00/24D | 11.00/24 | Her HXE | 6-5¼x6 | 935 | 5.6 | 650 | 198-2000 | 7-3½x16⅝ | Y | Fu 4B86 | 8 | Wis SD462 | 2F | H | ** -8.15 | Wis F409 | Ws6IA | 1080 | 1680 | a | T6 | 183 | 10⅛x3x⅜ | P |
| 10 | (D).....M6x6 | | 276 | 276 | 58000 | ▲21800 | 11.00/24D | 11.00/24 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16¼ | Y | Fu 4B86 | 8 | Wis SD462 | 2F | H | ** -8.15 | Wis F409 | Ws6IA | 1080 | 1680 | a | T6 | 216 | 10⅛x3x⅜ | P |
| 11 | International (7) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | (b)....K-6-F.4R | | 151 | 194 | 22000 | 6750 | 7.00/20 | 8.25/20 | Own BLD250 | 6-3⅛x4½ | 251 | 6.3 | 200 | 100-3200 | 4-2⅜x5⅜ | N | Own F51 | 5 | Own RF1450 | SF | H | 6.16-6.66 | Own F470 | LH4IHV | 507 | 848 | c | PX | 77 | 8⅛x⅛x⅛ | T |
| 13 | (b)....K-8-F.4R | | 161 | 215 | 27000 | 8470 | 7.00/20 | 9.00/20 | Own RED401 | 6-4⅛x5 | 401 | 6.3 | 318 | 140-2800 | 7-3¼x10⅜ | Y | Own F52 | 5 | Own RF1560 | SF | H | 6.50-7.16 | Own F550 | LH6IHV | 705 | 944 | c | PX | 84 | 9⅛x3⅛x⅛ | T |
| 14 | (b)...K-11-F.4R | | 161 | 215 | 37000 | 10925 | 9.00/20 | 10.00/20 | Own RED450 | 6-4⅜x5 | 451 | 6.3 | 360 | 148-2600 | 7-3¾x10⅜ | Y | Own F54 | 5 | Own RF1670 | SF | H | ** -7.16 | Own F760 | TW6IA | 966 | .... | G | PX | 84 | 10⅛x3⅛x⅜ | T |
| 15 | Ken- (D)523.4R | | 193 | 241 | 43000 | 14600 | 10.00/20 | 11.00/22 | Cum NHB6 | 6-5¼x6 | 743 | 17. | 565 | 200-2100 | 7-4½x16½ | Y | BL 7841 | 4 | Ti SW3012PA | WF | R | ** -6.16 | Tim 36000 | Ws4rIA | 924 | 1248 | a | TD | 102 | 9⅛x3¼x⅛ | C |
| 16 | worth(D)524.4R | | 193 | 241 | 54000 | 15400 | 10.00/20 | 11.00/22 | Cum NHB6 | 6-5½x6 | 743 | 17. | 565 | 200-2100 | 7-4½x16½ | Y | BL 7841 | 4 | Tim SW452 | WF | R | 6.0 -7.6 | Tim 36000 | Ws4rIA | 819 | 1192 | a | TD | 102 | 9⅛x3¼x⅛ | C |
| 17 | .....528.4R | | 186 | 234 | 40000 | 12500 | 10.00/20 | 10.00/22 | Bud L0525 | 6-4½x5½ | 525 | 5.5 | 385 | 135-2200 | 7-3x11½ | Y | Fu 5A620 | 5 | Ti SW3012PA | WF | R | ** -6.16 | Tim 35100 | Ws4rIA | 924 | 1248 | a | TD | 102 | 9⅛x3¼x⅛ | C |
| 18 | .....532.4R | | 186 | 234 | 35000 | 12500 | 10.00/20 | 10.00/22 | Wau 6MZR | 6-4¼x4½ | 404 | 5.9 | 300 | 112-2500 | 7-2⅜x12½ | Y | Fu 5A430 | 5 | Ti SW3012PA | WF | R | ** -6.16 | Tim 35100 | Ws4rIA | 924 | 1248 | a | TD | 102 | 9⅛x3¼x⅛ | C |
| 19 | .....(D)548.4R | | 193 | 241 | 54000 | 17000 | 11.00/22 | 12.00/24 | Cum NHB6 | 6-5¼x6 | 743 | 17. | 565 | 200-2100 | 7-4½x16½ | Y | BL 7841 | 4 | Tim SD462 | DR | R | ** -8.15 | Tim 36000 | Ws4rIA | 819 | 1192 | a | TD | 109 | 9⅛x3¼x⅛ | dbC |
| 20 | .....(D)552.4R | | 255 | 255 | 54000 | 20700 | 13.00/24 | 13.00/24 | Cum HB6 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | BL 7841 | 4 | Tim SD462W | WF | R | ** -8.15 | Tim F3200W | Ws4rIA | 1109 | 1192 | a | TD | 168 | 9⅛x3¼x⅛ | dbC |
| 21 | Marmon-Herr. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | (C)...CMM5T-6 | 2790 | 156 | .... | 225000 | 6673 | 7.50/20D | 7.50/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 176 | 100-3500 | 3-2½x4.71 | N | Ford | 44 | Thornton | S | H | ** -6.67 | Own M5 | M | 503 | .... | a | F | 82½ | 7½x3x¼ | C |
| 23 | (C)...CMM6T-6 | 2822 | 180 | .... | 225000 | 6710 | 7.50/20D | 7.50/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 176 | 100-3500 | 3-2½x4.71 | N | Ford | 44 | Thornton | S | H | ** -6.67 | Own M5 | M | 503 | .... | a | F | 106¼ | 7½x3x¼ | C |
| 24 | .....MH-555-6 | | 260 | 260 | 37000 | 14900 | 11.00/20 | 11.00/20 | Her RXC | 6-4½x5¼ | 529 | 6.3 | 390 | 131-2200 | 7-3x9½ | ♦§ | Tim SD353 | 2B | H | ** -8.15 | Tim F3100W | Ws. .A | 1092 | 1608 | . . . | F | 84 | 10⅛x3x⅛ | T |
| 25 | Peterbilt(D)344DT | 11415 | 189 | Opt | 43000 | 16250 | 10.00/20D | 11.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741 | 12 | Tim SW3012W | WF | A | 6.00- 8.5 | T 36000W | Ws6IA | 1212 | 1734 | a | FD | 106½ | 10¾x3¼x⅛ | TL |
| 26 | (D).....345DT | 11870 | 187 | Opt | 43000 | 17300 | 10.00/20D | 11.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741 | 12 | Tim SW452W | WF | A | 6.00-10.2 | T 36000W | Ws6IA | 1000 | 1626 | a | FD | 106½ | 10⅝x3¼x⅛ | TL |
| 27 | (D).....354DT | 11915 | 187 | Opt | 56000 | 17450 | 10.00/20D | 11.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741 | 12 | Tim SW452W | WF | A | 6.00-10.2 | T 27454W | Ws6IA | 1000 | 1626 | a | FD | 106½ | 10⅝x3⅛x⅛ | TL |
| 28 | (D).....355DT | 12575 | 187 | Opt | 56000 | 17900 | 10.00/20D | 11.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741 | 12 | Tim SD462W | 2F | A | ** -8.15 | T 27454W | Ws6IA | 1000 | 1626 | a | FD | 106½ | 10⅝x3⅛x⅛ | TL |
| 29 | Sterling | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | (D)HWS160H | | 185 | 245 | 42000 | 14500 | 10.00/20D | 10.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741§ | 12 | T SW3002PA | WF | L | ** -6.16 | T 26450W | Ws6IA | 1160 | 1878 | a | TX | 97 | 9x3¼x¼ | A |
| 31 | (D)RWS160H | | 219 | 232 | 42000 | 14500 | 10.00/20D | 10.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741§ | 12 | T SW3002PA | WF | L | ** -6.16 | T 26450W | Ws6IA | 1160 | 1878 | a | TX | 131 | 9x3¼x¼ | A |
| 32 | (D)HW8160HS | | 211 | 232 | 42000 | 15100 | 10.00/20D | 11.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741§ | 12 | T SW452W | WF | L | ** -6.00 | T 26450W | Ws6IA | 1092 | 1818 | a | TX | 123 | 9x3¼x¼ | A |
| 33 | HCS195 | | 191 | 207 | 48000 | 14000 | 10.00/20D | 11.00/22 | Wau 140CIK | 6-4½x5½ | 525 | 6.1 | 403 | 137-2250 | 7-3x16¼ | Y | Fu 5A62§ | 15 | Own 195W | CD | R | ** -7.31 | T 26450W | Ws6IA | 1160 | 1978 | a | TX | 105 | 9¼x3⅝x⅜ | A |
| 34 | (D)HCS195H | | 197 | 211 | 48000 | 15000 | 10.00/20D | 11.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741§ | 12 | Own 195W | CD | R | ** -7.31 | T 26450W | Ws6IA | 1160 | 1978 | a | TX | 109 | 9¼x3⅝x⅜ | A |
| 35 | (D)HWS235H | | 195 | 211 | 52000 | 15500 | 11.00/20D | 11.00/22 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Spl 7741§ | 12 | T SW452W | WF | L | ** -6.80 | T 27454W | Ws6IA | 1092 | 1810 | a | TX | 107 | 9¼x3⅝x⅜ | A |
| 36 | (D)HCS265H | | 178 | 195 | 60000 | 18500 | 11.00/24D | 12.00/24 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Fu 4B86§ | 12 | Own 265W | CD | R | 10.76-15.0 | T 27454W | Ws6IA | 1160 | 2010 | a | TX | 90 | 9¼x3⅝x⅜ | A |
| 37 | (D)HCS297H | | 178 | 195 | 70000 | 20500 | 12.00/24D | 13.00/24 | Cum HB600 | 6-4⅞x6 | 672 | 17. | 500 | 150-1800 | 7-4½x16½ | Y | Fu 4B86§ | 12 | Own 330W | CD | R | 10.76-15.0 | T 27454W | Ws6IA | 1280 | 2046 | a | TX | 90 | 9¼x3⅝x⅜ | A |
| 38 | Truckstell | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | (C)...F2X26.2F | | 156 | 237 | 26000 | ▲5900 | 7.50/20 | 8.25/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | Ford | 4 | Ford | SF | .. | ** -6.67 | Ford | F6IHV | 502 | 836 | c | TX | 82½ | 7½x3x.47 | CTf |
| 40 | (C).F2X27-0.2F | | 156 | 237 | 27000 | ▲6450 | 7.50/20 | 8.25/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | Ford | 8 | Eat 1350 | SFd | .. | 5.83-8.11 | Ford | F6IHV | 502 | 836 | c | TX | 82½ | 7½x3x.47 | CTf |
| 41 | (C)...F2X34.2F | | 156 | 237 | 34000 | ▲8235 | 8.25/20 | 10.00/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | F and BL | 12 | Cla R1300 | SF | .. | 5.67-6.83 | Ford | F6IHV | 605 | 1043 | a | TX | 82½ | 7½x3x.47 | CTf |
| 42 | (C)....F2X34-0 | | 135 | 224 | 34000 | ▲8235 | 8.25/20 | 10.00/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | Ford and BL | 12 | Cla R1300 | SF | .. | 5.67-6.83 | Ford | F6IHV | 605 | 1043 | a | TX | 82½ | 7½x3x.47 | CTf |
| 43 | (C)...F4X26.4R | | 144 | 210 | 26000 | ▲6300 | 7.50/20 | 8.25/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | Ford | 8 | Ford | SF | .. | 6.07-10.5 | Ford | F6IHV | 502 | 836 | c | TX | 63⅞ | 7½x3x.47 | CTf |
| 44 | (C)....F4X27-0 | | 117 | 180 | 27000 | ▲6300 | 7.50/20 | 8.25/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | Ford | 8 | Ford | SF | .. | 6.07-10.5 | Ford | F6IHV | 502 | 836 | c | TX | 63⅞ | 7½x3x.47 | CTf |
| 45 | (C)...F4X29.4R | | 144 | 210 | 29000 | ▲7000 | 7.50/20 | 8.25/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | Ford | 16 | Eat 1350 | SFd | .. | 7.47-12.9 | Ford | F6IHV | 502 | 836 | c | TX | 63⅞ | 7½x3x.47 | CTf |
| 46 | (C)....F4X30-0 | | 117 | 180 | 30000 | ▲2900 | 7.50/20 | 8.25/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | Ford | 16 | Eat 1350 | SFd | .. | 7.47-12.9 | Ford | F6IHV | 502 | 836 | c | TX | 63⅞ | 7½x3x.47 | CTf |
| 47 | (C)...C2X26.2F | | 157 | 234 | 26000 | ▲5800 | 7.50/20 | 8.25/20 | Chevrolet | 6-3⅞x3⅜ | 235 | 6.6 | 192 | 93-3100 | 4-2¾x5⅛ | N | Chevrolet | 4 | Chevrolet | SF | .. | ** -6.17 | Chevrolet | C6IHV | 546 | 780 | a | 2I | 82½ | 7½x3x.47 | CTf |
| 48 | (C)...C2X28.2F | | 157 | 234 | 28000 | ▲6500 | 7.50/20 | 8.25/20 | Chevrolet | 6-3⅞x3⅜ | 235 | 6.6 | 192 | 93-3100 | 4-2¾x5⅛ | N | Chevrolet | 8 | Tim | SFd | .. | 5.64-8.22 | Chevrolet | C6IHV | 546 | 780 | a | 2I | 82½ | 7½x3x.47 | CTf |
| 49 | (C)....C2X34-0 | | 141 | 224 | 34000 | ▲6500 | 7.50/20 | 8.25/20 | Chevrolet | 6-3⅞x3⅜ | 235 | 6.6 | 192 | 93-3100 | 3-2¾x5⅛ | N | Chevrolet | 8 | Tim | SFd | .. | 5.64-8.22 | Chevrolet | C6IHV | 546 | 780 | a | 2I | 82½ | 7½x3x.47 | CTf |
| 50 | (C)...C2X34.2F | | 157 | 234 | 34000 | ▲8285 | 8.25/20 | 10.00/20 | Chevrolet | 6-3⅞x3⅜ | 235 | 6.6 | 192 | 93-3100 | 4-2¾x5⅛ | N | C and BL | 12 | Cla R1300 | SF | .. | 5.67-6.83 | Chevrolet | C6IHV | 615 | 1043 | a | TD | 82½ | 7½x3x.47 | CTf |
| 51 | (C)...C4X26.4R | | 145 | 212 | 26000 | ▲6120 | 7.50/20 | 7.50/20 | Chevrolet | 6-3⅞x3⅜ | 235 | 6.6 | 192 | 93-3100 | 4-2¾x5⅛ | N | Chevrolet | 8 | Chevrolet | SF | .. | 6.41-11.1 | Chevrolet | C6IHV | 546 | 780 | a | 2I | 63⅜ | 7½x3x.47 | CTf |
| 52 | (C)....C4X27-0 | | 117 | 184 | 27000 | ▲2600 | 7.50/20 | 7.50/20 | Chevrolet | 6-3⅞x3⅜ | 235 | 6.6 | 192 | 93-3100 | 3-2¾x5⅛ | N | Chevrolet | 8 | Chevrolet | SF | .. | 6.41-11.1 | Chevrolet | C6IHV | 546 | 780 | a | 2I | 63⅜ | 7½x3x.47 | CTf |
| 53 | (C)...C4X29.4R | | 145 | 212 | 29000 | ▲6880 | 7.50/20 | 8.25/20 | Chevrolet | 6-3⅞x3⅜ | 235 | 6.6 | 192 | 93-3100 | 4-2¾x5⅛ | N | Chevrolet | 16 | Eat 1350 | SFd | .. | 7.47-12.9 | Chevrolet | C6IHV | 512 | 836 | a | TD | 63 | 7½x3x.47 | CTf |
| 54 | (C)....F4X30-0 | | 117 | 184 | 30000 | ▲2900 | 7.50/20 | 8.25/20 | Ford | 8-3⅛x3¾ | 239 | 6.4 | 180 | 100-3800 | 3-2½x4.71 | N | Ford | 16 | Eat 1350 | SFd | .. | 7.47-12 9 | Ford | F6IHV | 512 | 836 | a | TD | 63 | 7½x3x.47 | CTf |

§ Equipped with 3 speed auxiliary transmission. ▲ Includes cab. ♦ Additional speeds with auxiliary transmission

# SHULER AXLES FOR ROSS CARRIERS



Here's a fairly dramatic endorsement of the *quality* we build into Shuler Axles—17,000 pounds of load, plus a good share of the weight of the Ross Carrier itself—all wheeling comfortably along on an unpaved road (and on a Shuler Axle)!

This is just one of a long line of Shuler products—Commercial *Trailer Axles*, one-piece tubular or square, in capacities from 8,000 to 25,000 pounds—*Machinery* Trailer Axles with trunnion mountings, in capacities from 11,000 to 25,000 pounds—*Front Axles* for heavy-duty trucks and off-the-highway equipment—*House* Trailer and Farm Wagon Axles front-knuckle steer and rear axles—*Brakes and Drums*, Mechanical, for vacuum or air actuation—Fifth-Wheel *King Pins* and Forged Automotive Specialties of many kinds.

*Let us know your needs, and we will gladly send you complete specifications and prices.*

SHULER AXLE CO., *Incorporated*, LOUISVILLE, KY.

Detroit Office: 8424 Woodward Ave.
Export Division: 38 Pearl St., New York, N. Y.
West Coast Warehouse: 2937 Ford St., Oakland, Calif.

## SAE PROGRAM ANNOUNCED

A tentative program has been announced for the Summer Meeting of the Society of Automotive Engineers which is to be held at French Lick, Ind., June 2 to 7.

Of interest to fleet operators will be the following sessions: On Monday, June 3, at 9:30 A.M., Professor A. E. Neyhart of Pennsylvania State College will present a paper on "Which Driver for the Job?," and the afternoon session will include a discussion on "Truck Design from the Operator's Viewpoint," by T. V. Rodgers of ATA; H. F. Chaddick, of American Transportation Co.; J. L. S. Snead, Jr., of Consolidated Freightways, Inc.; and W. D. Bixby, H. H. Earl, and R. M. Werner, of United Parcel Service of N. Y., Inc.

On Tuesday, at 9:30, T. L. James, of Burlington Transportation Co., will discuss "Bus Design from the Operator's Viewpoint," and at the same hour Dr. G. B. Watkins and J. D. Ryan will cover the subject of "Automotive Glazing with Plastics." At 2:00 P.M., the subject of "Shop Layout and Equipment for a Large Fleet" will be discussed by E. W. Templin, Los Angeles Dept. of Water & Power.

The afternoon session on Friday will be devoted to a symposium on gear lubricants, and a paper on "Recent Developments in Gear Lubricants," by P. V. Keyser, Jr., of Socony-Vacuum Oil Co.

## FORD MOVES TRUCK PLANT

All Ford Motor Co. truck and bus production in the Detroit area is being moved from the Rouge plant in Dearborn to the Highland Park plant, M. L. Bricker, vice president in charge of manufacturing, has announced.

## FRUEHAUF ISSUES MANUAL

Fruehauf Trailer Co. is supplying its factory branches with a new Maintenance Manual and Parts Catalog covering the Fruehauf "Model 5" Trailer, to be distributed to present owners and new purchasers.

It is designed to provide self-service instructions for minor repairs or adjustments that may be performed without the aid of special tools or trained personnel.

## KERKLING MOVES OFFICES

**The executive office of Kerkling & Co. has been transferred to Burbank, Calif., where a new factory for the nationally known K&W products is under way.**

## REO GETS SAFETY TROPHY

Reo Motors, Inc., has been awarded the first postwar safety trophy for motor vehicle design. Basis of the award is the company's recent introduction of a new complete unit safety school bus which conforms to all requirements of all states. The presentation was made in New York recently. Joseph S. Sherer, Reo vice president, accepted the large gold trophy from Alfred M. Best, publisher of Safety Engineering magazine.

Reo expects to produce about 1500 buses and 20,000 commercial vehicles this year.

## JONES JOINS AUTOCAR

B. Frank Jones has joined the Autocar Co., Ardmore, Pa., and will work immediately under B. B. Bachman, vice president in charge of engineering. Mr. Jones formerly was chief engineer of the Pierce-Arrow Truck Division, and of the temporary merger of Studebaker and Pierce Arrow known as S.P.A. Truck Corp. Later when White took over the Indiana truck he was chief engineer of that division. More recently he was engineer in charge of all of the engineering problems growing out of The White Motor Co.'s war work.

**B. Frank Jones, who has joined the engineering department of the Autocar Co., Ardmore, Pa.**

## CORRECTION—TIRE CARE

**Pages 40 and 41 (The ABC's of Tire Care) of the April issue contain an error in captions. It is asked that readers amend their copies so that the first two headings in all capital letters read as follows:**

**"*Over*inflation causes rapid center wear . . . can result from consistent *under*load."**

**"*Under*inflation causes more shoulder wear . . . can result from consistent *over*load."**

**The photographs and captions then tie in with proper sequence.**

## ATA CLEVELAND PROGRAM

The Safety & Operations Section of the American Trucking Assns. will meet at the Hotel Cleveland, Cleveland, Ohio, May 25 to 29. A tentative program has been announced.

At 10:00 A.M., on Monday, May 27, a paper will be presented on "Fire Prevention in the Trucking Industry," and another will be given on "Relationship of S & O Section with Equipment & Maintenance Section of ATA."

Subjects covered at 2:30 P.M. will include "Selection and Training of Drivers" and "Psychology of Safety."

"The Shippers' View of Claim Prevention" and "Effective Ways of Preventing Claims" will be taken up on Tuesday at 9:30 A.M., and the afternoon session will include a panel discussion on "How Would Suggested Changes in the ICC Safety Regulations Affect our Operations?"

The morning session on Wednesday will include papers on "How to Edit a Company Publication," "ATA Program on Insurance and Radio Communication," "Industrial Safety in the Trucking Industry" and "ATA's Industrial Safety Activities."

With the announcement of the program, emphasis is placed on the fact that this meeting is not restricted to members only. Anyone interested in fleet safety is welcome to attend these sessions, officials point out.

## FORD PLANS NEW CAR

Formation of a low-price car division, in line with plans originally made public in 1944, was announced April 12 by Henry Ford II, president of the Ford Motor Co.

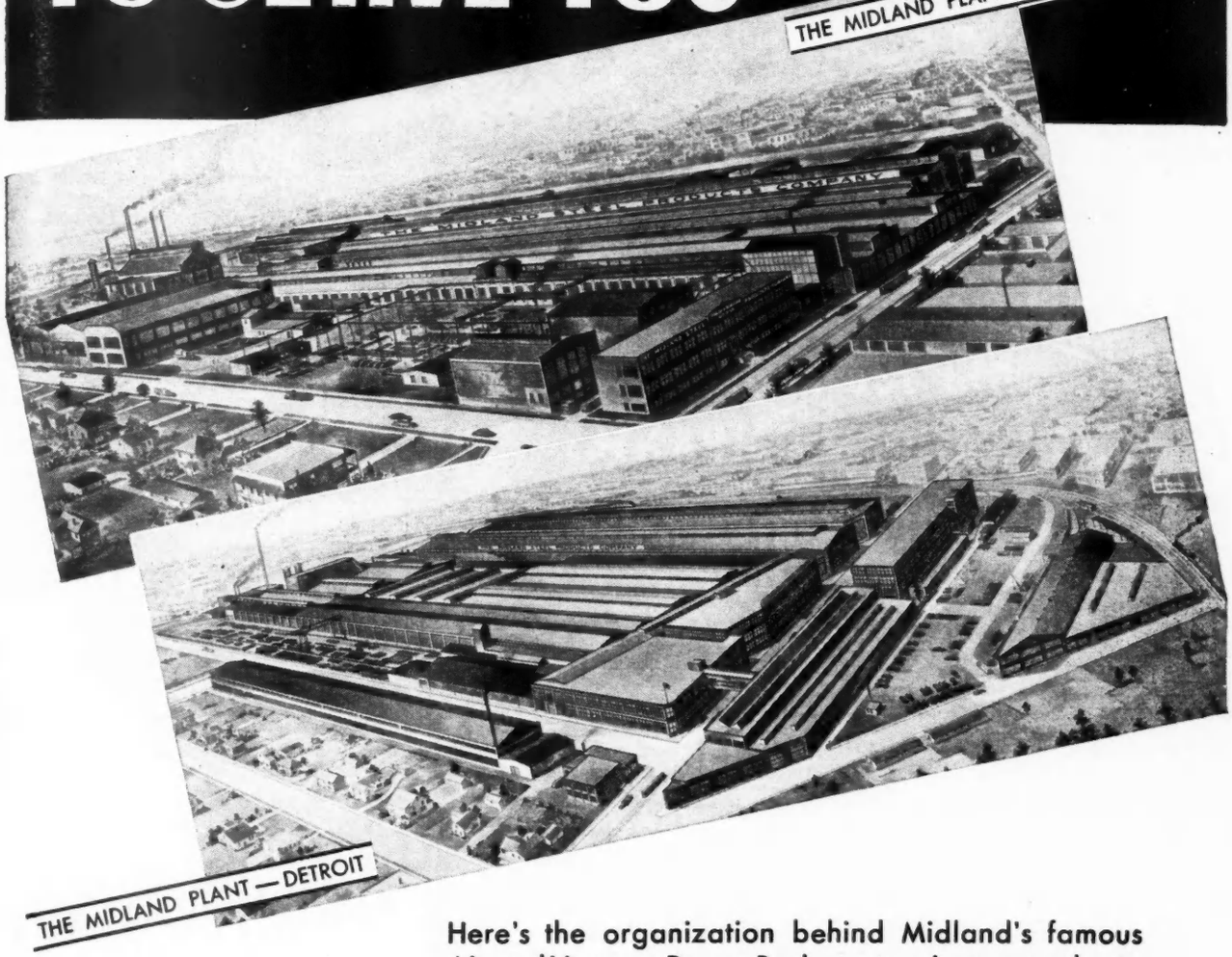
Mr. Ford said the new car will be presented to the public following introduction of the regular line of postwar Fords, some time after January, 1947.

## IDENTIFIES FISK RECAP

Now available to Fisk Controlled Process Franchise distributors is a new branded Fisk Five Star Camelback which is said to be the best quality permitted under present government regulations. The new camelback will carry a five-star emblem imprinted every 18 in., and the package will be identified by characteristic colors. A rubber medallion will be cured into the sidewall of recapped tires to show Fisk recapping workmanship.

(TURN TO PAGE 100, PLEASE)

# TWO GREAT PLANTS TO SERVE YOU



THE MIDLAND PLANT — CLEVELAND

THE MIDLAND PLANT — DETROIT

Here's the organization behind Midland's famous Air and Vacuum Power Brakes — two immense plants, unsurpassed in equipment, facilities and personnel. Here's evidence of the merit offered to you in Midland Power Brakes, Door Controls, Power Shift, Power Shovel Control and other Midland products which provide safer, more economical operation for countless users in many fields. You can depend upon the great Midland factories for highest quality and satisfactory cooperation and service.

**Our enlarged plant facilities make it possible for us to consider the manufacture of a few items in household or office appliance, automotive or mechanical fields. We invite inquiries to Midland New Products Dept., at the address below.**

**THE MIDLAND STEEL PRODUCTS CO.**

10605 MADISON AVE., CLEVELAND 1, OHIO • *Export Department: 38 Pearl St., New York, N. Y.*

# MIDLAND

AIR *and* VACUUM POWER BRAKES — CONTROLS

# INTRODUCING . . . . .

★ . . . BYRON K. FLETCHER, as assistant sales manager of the Hastings Mfg. Co., and the Casite Corp., Hastings, Mich.

. . . C. Q. SMITH, newly appointed as assistant to the president of the American Brakeblok Division of the American Brake Shoe Co. of Detroit. . . . And FRED J. KELLY, as the newly appointed manager of replacement sales.

. . . WILLIAM E. THOMAS, who is now division sales manager in charge of valve sales in the southeastern states territory for the Homestead Valve Mfg. Co., Coraopolis, Pa. His headquarters will be in Atlanta, Ga.

. . . KETCHEL F. MORLEN, who has returned to the United States Rubber Co. as district manager of the company's U. S. Tires Division.

. . . E. V. DUFFY, as service manager for the Pennsylvania Rubber Co. of Jeannette, Pa.



. . . STUART FORBES, as assistant manager of the Philadelphia division of Ethyl Corp.

. . . B. J. SCHOLL, as district sales manager for the Lynch Mfg. Co., in the states of Mich., Ind., Ohio. Pa., W. Va., N. J., Md., Del. and D. C.

. . . T. W. BOYLE, as district manager for the sales of all Heil products in the states of Mo., Neb., Iowa, Kan., and Wyo., for the Heil Co. He will make his headquarters in Kansas City, Mo.

. . . B. FRANKLIN WOODMAN, as district manager for the Spark Plug Division of Edison-Splitdorf Corp., West Orange, N. J. He will cover the territory embracing Ohio, Mich., W. Va., Western Pa., Central Ky.

. . . FRED H. GEYER, as general sales manager of C. E. Niehoff & Co., automotive products manufacturers

(TURN TO PAGE 102, PLEASE)

# *For minimum wear, also...*


# *but 26 basic designs*

## OF SEALED POWER PISTON RINGS


*Individually Engineered*

MINIMUM cylinder wear in your fleet is one of the *"big four"* requirements for piston ring satisfaction. The other three are oil control, blow-by control and low friction. You can be sure of *all four* when you use Sealed Power Individually Engineered Ring Sets, developed from twenty-six (26) basic designs of piston rings for BALANCED PERFORMANCE. Whatever the make, model, or cylinder wear condition, there's a Sealed Power Set specifically engineered to do the best possible job. Sealed Power has been refining these sets seven years, has been producing rings for car, truck and engine builders 34 years. For best results, re-power with Sealed Power motor parts. Sold through leading distributors. Sealed Power Corporation, Muskegon, Michigan and Stratford, Ontario.

*Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts.*

**Keep Your War Bonds! Get $4 for $3!**

# SEALED POWER PISTON RINGS

BEST IN NEW TRUCKS! ★ BEST IN OLD TRUCKS!

## CHEVROLET ESTABLISHES FLEET DEPARTMENT

A NEW national fleet department, which in number of personnel and scope of service will be the largest and most comprehensive in the history of the organization, has been established by the Chevrolet Motor Division of General Motors Corp.

Ray C. Meddaugh, formerly Chevrolet assistant regional manager at Chicago, has been appointed manager of the department. J. W. Thayer and York R. F. Giddey have been named assistant managers for sales, and H. M. Page assistant manager in charge of service, engineering and training.

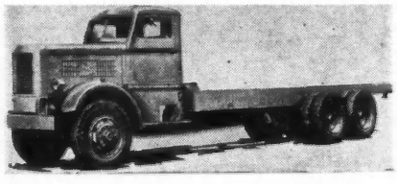
*Left to right. J. W. Thayer, assistant manager; Ray C. Meddaugh, manager; York R. F. Giddey, assistant manager, and H. M. Page, assistant manager*

A large staff of highly trained sales and distribution specialists will be located in Chevrolet offices throughout the nation to work closely with commercial, industrial and state and local governmental purchasers of fleet equipment.

Another group of fleet experts with wide experience in mechanical service and engineering will cover the country and render a unique and exclusive Chevrolet service to more than 6300 fleet-supervised shops and garages. Among the services which the fleet service representatives will provide will be advice on fleet reconditioning, schools for garage foremen and superintendents, use of special equipment, cost and operation checks, analysis of automotive problems peculiar to the fleet operator, designing of new parts, and many other services to improve operating costs and increase efficiency.



**Dodge Division of Chrysler Corp. has started expanded truck manufacturing operations in a 369,600 sq. ft. addition to its huge truck plant in Detroit**



**FWD model M6x6 chassis for heavy-duty hauling work. This standard model is listed as available for immediate delivery with either 243- or 276- in. wheelbase. Chassis weight is 21,000 lb. and gross vehicle weight is 58,000 lb.**

(TURN TO PAGE 212, PLEASE)

## POSTWAR EQUIPMENT SPECIFICATIONS

(CONTINUED FROM PAGE 55)

take advantage of considerable expert advice from several very capable engineers representing tractor and trailer manufacturers with whom we are working closely and whose models we are using. For example, during the two years that our equipment revision program and postwar planning has been actively under way, we have had more than 15 conferences with these engineers on this subject.

These conferences as a whole have been held at our own operating headquarters, where our shop repair and maintenance records could be consulted and where we would have before us actual examples of mechanical failures in equipment which needed to be corrected through engineering improvement and design. As a result, a number of entirely new efficiency features have been incorporated in the new models of tractors, trailers and trucks which we have selected for procurement; and we also have developed detailed specifications for certain additional accessories and parts for such units.

### Payload-Cost Considerations

THE first basic consideration in the development of our new model tractor-trailer combination for postwar long-distance operations has naturally been the assumed need for substantial increase in total payload capacity with low operating cost per ton-mile. Improvements in this respect are absolutely essential, considering the recent increases in operating costs—higher wages for drivers, shop mechanics, and supervising personnel; increase in factory purchase costs for operating units, accessories and parts; increase in taxes; and other increases in many items of terminal operating expenses —all of which cost increases must be coupled with the apparent lack of success by the trucking industry in getting ICC sanction for the advances in trucking rates for which the organized trucking groups have been petitioning.

### Trailer Specifications

THUS, it was essential, as the first step, to select equipment that would provide the greatest possible operat-

(TURN TO NEXT PAGE, PLEASE)

## POSTWAR EQUIPMENT SPECIFICATIONS

(CONTINUED FROM PAGE 105)

ing efficiency in total payload capacity; and more especially so for the long-haul tractor-trailer units on such runs, for example, as between Chicago and Columbus, Ohio. Considering the factor of the 45-ft maximum length limitation in many states for the tractor-trailer combination, the practical extreme in trailer length is 30 ft, and then only with tandem axles. Since the extra weight allowances for this type of a vehicle adds greatly to payload possibilities, all of our new long-haul 30-ft trailers will have tandem axles with four dual wheels, thus making it possible for a maximum trailer load capacity of 45,000 pounds in states where their legislatures have recognized that the modern highways will carry these gross loads much more efficiently than the old highways carried lesser weights.

We consider it good economy that the eight wheels on each trailer should be equipped with enlarged 22-in wheels and that they should carry 10.00x22 size tires —as compared with our previous use of 9.00x20 tires on 20-in wheels for all long-haul trailers. We are assuming, as a general estimate, that this exclusive use of the larger 10.00x22 tire will represent average annual savings of at least $200 per trailer unit, because of increases in the service life of our tires, longer brake life and fewer wheel bearing failures —besides extended utilization of our equipment. As one factor, the longer spokes of the larger wheels will aid materially in the more rapid dissipation of the heat from the concentrated area of the wheel hub itself.

All of our new 30-ft, 8-tire trailers will be of the steel integral body type construction, and it is expected that this factor will represent considerable savings in their annual upkeep, as compared with our older wooden body-on-frame type. The new trailers also will have a number of built-in protective features and reinforcements as compared to our older trailers.

As one safety feature, the driver of the outfit will operate vacuum-control brakes fitted with a ¾-in control line instead of the usual ½-in size and these trailers will be equipped with relay valves which will give at least 30 per cent quicker activation. Another feature is a 5-way lighting-system to get proper turn signal and grounding connections from the tractor to the trailer, instead of the 2-way system on our older trailers. On our old trailers, the lighting connections back to the trailer were grounded through the fifth wheel; but on the new equipment there is a direct wire extended through the lighting cable to carry the ground from the tractor to the trailer.

One reason for this latter improvement is the fact that the trailer

(TURN TO PAGE 108, PLEASE)



## ● WHAT'S NEW?

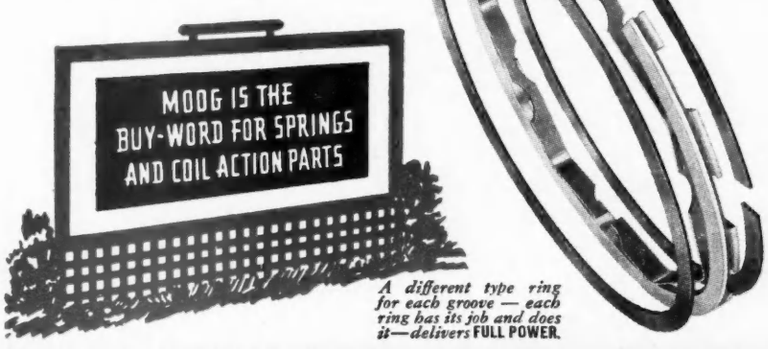
***ANSWER . . . (To Question on P. 105)***

**Geon is a new polyvinyl resin developed by B. F. Goodrich Co. It is claimed to make an ideal seat cover, is resistant to wear and to the elements.**

***(Another Cartoon Quiz is on P. 108)***

# STOP THE COMBATS
(Comebacks)
## — INSTALL MOOG X-PLUS


**X-PLUS**
**PISTON RINGS**
(U. S. Pat. No. 1,771,198)




*A different type ring for each groove — each ring has its job and does it—delivers* **FULL POWER.**

**It's a fact, repairmen who know will tell you, that the Moog X-Plus Piston Ring has the features they themselves would include if they designed their own Piston Rings. Flexibility, battleship oil ports, no-hammer-handle installation, quick-seating, etc., all go to insure FULL POWER performance, new-day motor thrills and stop costly comebacks.**

**Get the Moog FULL POWER story today, write us now.**

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*Warehouses in principal cities*

## POSTWAR EQUIPMENT SPECIFICATIONS

(CONTINUED FROM PAGE 106)

lights, when grounded through the fifth wheel, often would fail or partially fail because of the fifth wheel being covered with grease, and especially so during winter months when grease remains more congealed. Even if not a complete failure of lights, they might be so much dimmed as to represent a driving hazard. When the lights would thus fail, the usual remedy by the driver was to uncouple his tractor from the trailer; then couple up again, thus wiping away surplus grease. However, at best, this remedy resulted in time wastage; and if the light failure should come under road conditions where re-coupling could not be performed immediately, there would result a period of hazardous driving without proper lighting. This practice has been prevalent in the industry for many years.

### 36-In. Fifth Wheel

AS TO the fifth wheel itself, the new equipment will be improved by the installation of a larger sized 36-in wheel, as compared with a former width of only 28 in. This extra 8 in. added to the width of the fifth wheel is considered an important protective improvement in both safety and maintenance costs. It makes the trailer less subject to an upset when being backed up or turned too sharply on slippery highways. A number of such mishaps have occurred to company equipment, with costs which have ranged from $500 to $2000 or more, from damage to the tractor-trailer or cargo and sometimes both.

### Warning Signs

EACH new trailer also is further protected from damage by two driver warning signs, painted in conspicuous lettering at the right-hand front side of the body and at a level easily seen by the driver in a backward glance through the rear cab window from his driving seat. One notice is "HEIGHT 12 FEET," as information and warning, if he should be required to drive under a low overhead obstruction which still

(TURN TO PAGE 110, PLEASE)

# Put Your Fleet Problems in This Test Tube

*Hundreds of Fleets Depend on advice from*

**VALVOLINE'S FLEET LABORATORY SERVICE**

From a chemical and physical analysis of your crankcase drainings—sometimes supplemented by an examination of engine parts—Valvoline Fleet Laboratory can show you how to get better fleet performance at less cost per mile.

These laboratory tests are as exhaustive as science can make them. And in every case the conclusions are evaluated in the light of your own operating conditions—our suggestions are simple—practical—easy to use.

Wire or write
our nearest branch

**FREEDOM-VALVOLINE OIL COMPANY**

Dept. 41E, Freedom, Pa.

New York - Washington - Toronto
Pittsburgh - Atlanta - Cincinnati
Detroit - Chicago - Los Angeles
Vancouver, B. C. Refineries at
Butler and Freedom, Pennsylvania.

## VALVOLINE FLEET CONTROL LABORATORY SERVICE

*Ask the Valvoline man how this service can be obtained FREE*

## POSTWAR EQUIPMENT SPECIFICATIONS

(CONTINUED FROM PAGE 108)

exist on many highways. The second warning reads: "LOWER DOLLY WHEELS BEFORE UNCOUPLING." Failure to observe the practice suggested in the latter warning has resulted in numerous cases of damage to company equipment, the required repair costs often up to $200 or more besides the equipment-out-of-service increase.

Several additional protective features have been added at the rear of the new trailers which will result in further economies. Instead of the former flimsy rubber bumper guards which usually are soon knocked off, the rear end of each new trailer is protected by a strong built-in steel guard as wide as the trailer. The guard is several inches thick and reaching out about four inches beyond the vertical plane of the two rear doors when closed. This guard gives bumper protection to the two rear doors and corners and also protects the rear-end turn signals and body lights.

At the rear of each trailer is a "right turn" and "left turn" directional light, which is required in some states but not in others at the present time. On the two rear doors of each trailer also are short lengths of "safety chains." When the doors are closed, the ends of the two safety chains may be tightly clamped together; and if desired the clamp may be protected with a padlock.

On the old company trailers, a set of safety chains usually was not added until after a door lock had failed, or maybe not until after there had been loss of goods from pilfering, or damage to goods from the doors coming open or being opened. Under the new program it is planned that such possible damage shall be "headed off." The safety chains described above are not to be confused with the old type of tail-gate chain, since none of the new Keeshin trailers will have tail-gates.

Still a further safety protection at the rear of each new trailer are diagonal warning bars added with a reflecting material which becomes luminous when within range of a head-light from the rear at night. This feature is added as a measure in the interest of public safety only.

### Engineered Bodies

INSIDE the body of each new trailer are also other engineering improvements. The inside dimensions of the new trailer bodies are: length 28 ft; width 7¼ ft; height 6½ ft. The inside body height of some of the next new units to come later may be increased from 6½ to 7 ft, to provide additional loading space for more bulky type of goods. Previous company experience has included numerous losses from failures of trailer floors. These failures have

(TURN TO PAGE 112, PLEASE)



## ● WHO WAS IT?

***ANSWER... (To Question on P. 108)***

**Arthur Herrington of Marmon-Herrington. His hockey playing was only the beginning of a picturesque career that has taken him to the far corners of the globe.**

***(Another Cartoon Quiz is on P. 112)***

# SMOOTH HORSEPOWER

# CĀSITE

**Guarantees better and smoother performance or double-your-money-back**

● Break in those new motors, tune up those old motors—with Casite.

Casite carries oil quickly to the tight spots . . . retards formation of sludge and gum . . . reduces engine wear . . . keeps motors clean and full of power.

Long an accepted maintenance product with many of the largest fleets, Casite is easy to use . . . and positive in results.

Put Casite in every motor now, and keep it there—for better and smoother performance all-year-round.

Use Casite in the crankcase every oil change and through the air intake of gasoline motors every three months—a pint for all passenger cars and small trucks; 10% of crankcase capacity for all others.

## WHAT CASITE DOES

- **Carries oil to the tight spots.**
- **Protects motor during break-in period.**
- **Reduces formation of sludge and gum.**
- **Frees sticking valves and rings.**
- **Gives better and smoother performance all-year-round.**


**THE CASITE CORPORATION • HASTINGS, MICHIGAN**

## POSTWAR EQUIPMENT SPECIFICATIONS

(CONTINUED FROM PAGE 110)

caused cargo damage and also injuries to personnel, a few of which have been so serious as to have resulted in broken legs or ruptures. This condition can also cause dissatisfied customers.

To head off this hazard, the floors of all new trailers will be reinforced by the use of long bars of boxed-in stainless steel laid horizontally to separate the floor boards and to come up flush with the floor surface. Each trailer floor will have six such reinforcements, each 1¼ in wide and 1⅛ in thick. This feature adds very little to the gross weight because of unique design and it is roughly estimated that the use of such reinforcing will save about one-half of the former annual cost of trailer floor repairs and replacements besides fewer personal injuries. This saving for each trailer, extending through its expected life of 10 years, should total about $300 in maintenance cost alone.

As another trailer body improvement, each of the two interior side walls will be strengthened by the addition of three long wood panel reinforcements, separated by wide spaces and extending through the full length of the trailer. These panels are made of hard pine, and are 8 in wide and ⅞ in thick. The need for this improvement was arrived at through analysis of previous trailer maintenance costs. It especially will prevent damage to side walls from the cartage of such materials as heavy and irregularly shaped automobile parts or steel castings. Such damage has been frequent, often resulting in the need of extensive interior side wall replacements and also outside metal panel replacements, with damage costs often ranging up to $100 or more.

### Proper Weight Distribution

ANALYSIS of company trailer maintenance costs has resulted in another preventive measure, chiefly educational, to be applied to the new trailers. This analysis indicates that there have been previous large losses in maintenance repairs caused by damages that resulted from poor dis-

(TURN TO PAGE 114, PLEASE)

# NEW GMCs for Highway Haulers

## WAR-PROVED and IMPROVED FOR 1946

- Powerful, economical "Army Workhorse" engines of Valve-in-Head design with Tocco-hardened Crankshafts, Airplane type "Durex" Main Bearings, Heat-resisting Exhaust Valves with improved Valve Seat Inserts, Positive Crankcase Ventilation, Turbo-Top Pistons and Full Pressure Lubrication through Rifle Drilled Connecting Rods.
- Rugged, built-for-the-job chassis with extra strong Frames, Springs and Axles, heavy duty Transmissions and Clutches, Needle Bearing Universal Joints, Recirculating Ball-Bearing Steering and powerful, easy-action Brakes.
- Rider Ease Cabs with Cradle-Coil Cushions, Wide Visibility "V" Windshields, Quick-vision Instrument Panels, All-Weather Insulation and Controlled Ventilation.

New GMCs offer you the most in highway truck value in a most complete selection of models. There are gasoline and diesel powered tractor units, four-wheelers and six-wheelers in tonnage ranges to fit every requirement . . . and with equipment options which include dual performance and dual drive axles, air or power-hydraulic brakes, conventional or cab-over-engine designs. There are pick-ups, panels, stakes and platforms for all kinds of local and long-distance transport. It will pay you to investigate GMC. For, whatever you haul . . . from ½ to 20 tons . . . you'll find a war-proved, improved GMC truck ideally suited to each individual job.

*THE TRUCK OF VALUE*

GMC TRUCKS

GASOLINE DIESEL

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

## POSTWAR EQUIPMENT SPECIFICATIONS

(CONTINUED FROM PAGE 112)

tribution of load weights. These damages have been chiefly to the bodies themselves, floors, springs, tires and wheel bearings. They usually result from the handling of very heavy items, often loaded by cranes or mechanical dock trucks. In the total, these trailers were not overloaded, but the heavy items loaded were too much concentrated in one spot. Misloading of improper weight distribution over the vehicle has been very costly in many cases.

One remedy will be the interior marking of all trailers, as a guide for the proper weight distribution of the permissible load. The other remedy is an educational program for the checkers and dispatchers—and a weight distribution program designed to reach all dock workers, drivers and also shippers, since many trailers are spotted at other docks and loaded entirely by the shipper. Metal strip markers on the upper side walls of all trailers will divide the interior of the trailer into four sections of equal size. Each section will be marked conspicuously to indicate the allowable maximum weight as shown in Fig. 3. This plan provides that each of the two front sections of a 30-ft tandem axle trailer, with a 40,000 lb total load limit, should be tagged with: "MAXIMUM WEIGHT 7500 POUNDS." In contrast, the two rear sections should be tagged with: "MAXIMUM WEIGHT 12,500 POUNDS."

### Engine Specifications

EXTREMELY important also, in our company program for selection of the most efficient postwar automotive highway equipment, is the power of the tractor for the long-distance tractor-trailer combination. The largest tractors previously used in the Keeshin long-haul operations had an engine displacement of 318 cu in while many others were much smaller. In contrast, the engine model best adaptable for standardizing our future company long-haul operations with tandem axle trailer has a displacement of 450 cu in, a power increase of about 30 per cent.

One of the efficiency advantages from such a larger power plant is much greater economy in gas consumption per ton-mile. This will be chiefly because the driver, over an average highway route with some upgrade or hills will not be required to shift so often into lower gears. This also will enable us to maintain a more speedy trip schedule with less wear and tear on the equipment. This saving in trip time will add proportionate improvements in our freight dispatching program with more satisfied customers. There will be further benefits to morale of drivers, through less tiresome driving

(TURN TO PAGE 116, PLEASE)



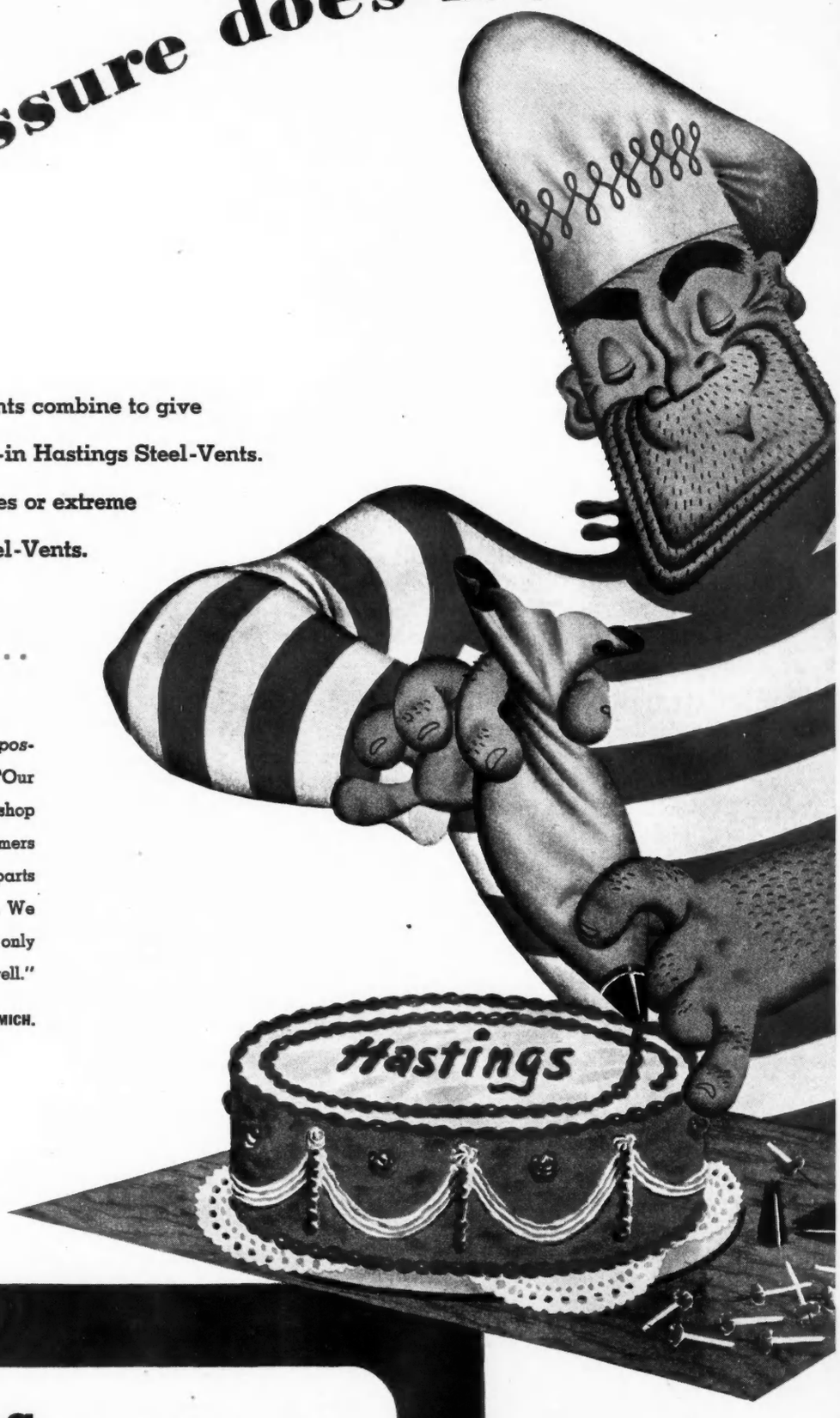
## ● TRUE OR FALSE?

*ANSWER . . . (To Question on P. 112)*

**True. The air will actually escape through the rubber itself. Molecules of oxygen and nitrogen pass slowly through the rubber. This loss occurs whether the truck is in operation or is parked in a garage.**

*(Another Cartoon Quiz is on P. 116)*

# Soft Pressure does it!




*Soft pressure* and steel segments combine to give long life and top performance—in Hastings Steel-Vents. Whether it's in rebores, resleeves or extreme tapers, you can depend on Steel-Vents.

## SOFT PRESSURE DOES IT... IN REBORES, TOO

***This shop gives its customers the best possible job, so they use Steel-Vents:*** "Our parts business has been built around our shop service. We endeavor to give our customers the best possible job in replacement parts that will give the longest possible wear. We are today using the Steel-Vent ring in not only all of our re-ring jobs but rebores as well."

**HASTINGS MANUFACTURING CO. • HASTINGS, MICH.**
Hastings Ltd., Toronto

**HASTINGS STEEL-VENT PISTON RINGS**

U. S. PAT. 2,148,992

TOUGH ON OIL-PUMPING GENTLE ON CYLINDER WALLS

## POSTWAR EQUIPMENT SPECIFICATIONS

(CONTINUED FROM PAGE 114)

schedules and less time on the road away from home. These drivers also will be safer operators and more considerate of the other highway traffic.

Because of the enlarged power plant and uniformity of other component assemblies, there will be lessened strain on the vital engine parts and accessories; and it may be assumed that these tractors will have less idle time in the shop for repairs and overhauls. It is confidently believed, because of these enumerated economy factors, that the extra initial cost of these larger power units will be earned back for the company during the first year of their operation, besides a more economical operation thereon.

All tractors to be used in our long-haul operations will be equipped with mechanical governors set at 40 m.p.h., which speed regulating policy has been effective with the company for many years, except during the war emergency period when 35 m.p.h. was requested by our government.

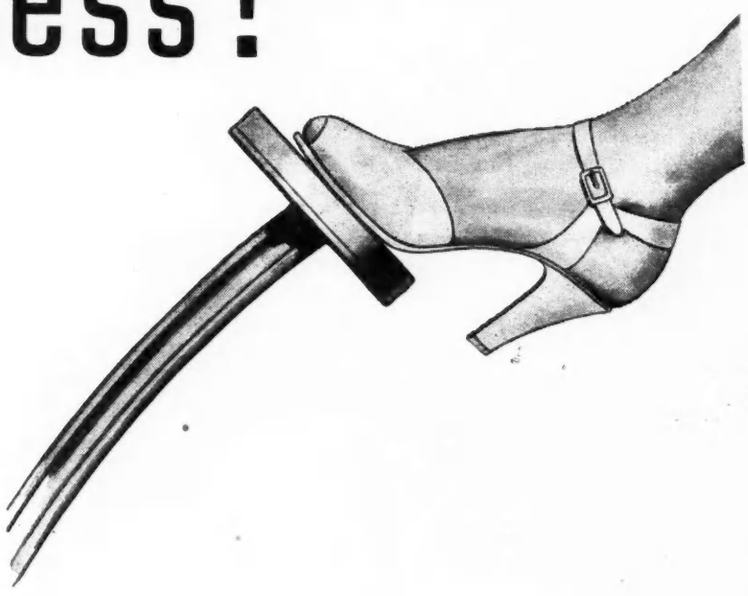
### Standardized Parts

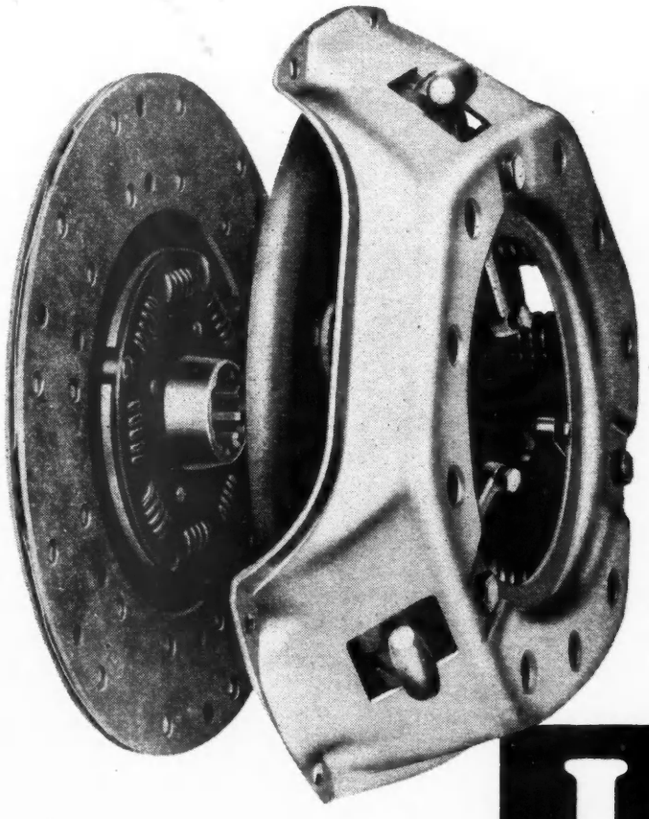
AS NEARLY as possible, the company is specifying for all new tractor and truck units, exact uniformity in the make of all accessories and parts. This especially will include such items as rear axle housings, springs, generators, voltage regulators and water pump assemblies.

There are several specific economy reasons for this part of the planned company postwar replacement program. First, such a uniformity in parts and assemblies will mean large reductions in required total inventories. Second, it will be much easier, when our standardization program shall have been fully achieved, to train our shop mechanics under standard shop practices and to keep up our maintenance schedules as required. Third, highway emergency servicing will be much more easily achieved at a lesser operating cost.

(TURN TO PAGE 118, PLEASE)

# Effortless!





Car, truck or bus — it gets a reputation for being "easy to drive" when equipped with the Long semi-centrifugal clutch. The Long clutch is designed to give greater torque capacity at increased speeds and has that effortless, low pedal pressure essential for traffic driving.

**LONG MANUFACTURING DIVISION**
**BORG-WARNER CORPORATION**
**Detroit 12, and Windsor**

**LONG**

**CLUTCHES • RADIATORS • OIL COOLERS**

## POSTWAR EQUIPMENT SPECIFICATIONS

(CONTINUED FROM PAGE 116)

### Other Improvements

NATURALLY, there are other engineering improvements that the company should like to see made in the tractor models that we have chosen in our standardizing program. One example, is desired improvements in the mounting brackets for the tractor cab. The three-point suspension feature for cab attachment to frame seems most practicable; but our company maintenance experience indicates that there should be developed a much stronger cab with reinforced mounting brackets at both front and rear. Our shop records prove that such weaknesses of our present cabs have resulted in costly damages, to radiators, water pumps and fan assemblies, besides the repair expense to the cabs themselves.

Some may wonder how a weak cab bracket can cause damage to a fan assembly or radiator. This is because the radiator is fastened to the cowl of the cab by two radius rods. If the cab drops or twists because of the failure of a mounting bracket it pulls the radiator into the fan.

### Driver Comfort

FOR improvement in driver comfort and toward lessened driver fatigue, we have specified that all bucket type seats for our new tractors must have hydraulic suspension. We have further specified that all new tractor defrosters shall be of the fan-type, with heater attachment.

As to whether there shall be or shall not be radios on our new model tractors, we at present have not fully decided. However, we have decided that, for safety reasons and in the interest of fire prevention, there either should be no radios at all or that there will be adopted a single standardized plan for radio installation with standard electrical connections.

As to the further utility of our older equipment that we shall replace as rapidly as we can procure the new standardized models, it is probable that about one-tenth of our present fleet of tractors and trucks can be retained and economically converted in one way or another. We shall eliminate all of our 10-ft and 12-ft city trucking service bodies, and standardize for city service only on the 14-ft body. It is probable that we also shall convert some of our old tractors into trucks, by lengthening their frames to the proper length truck wheelbase.

*END*

*(Please resume your reading on P. 56)*



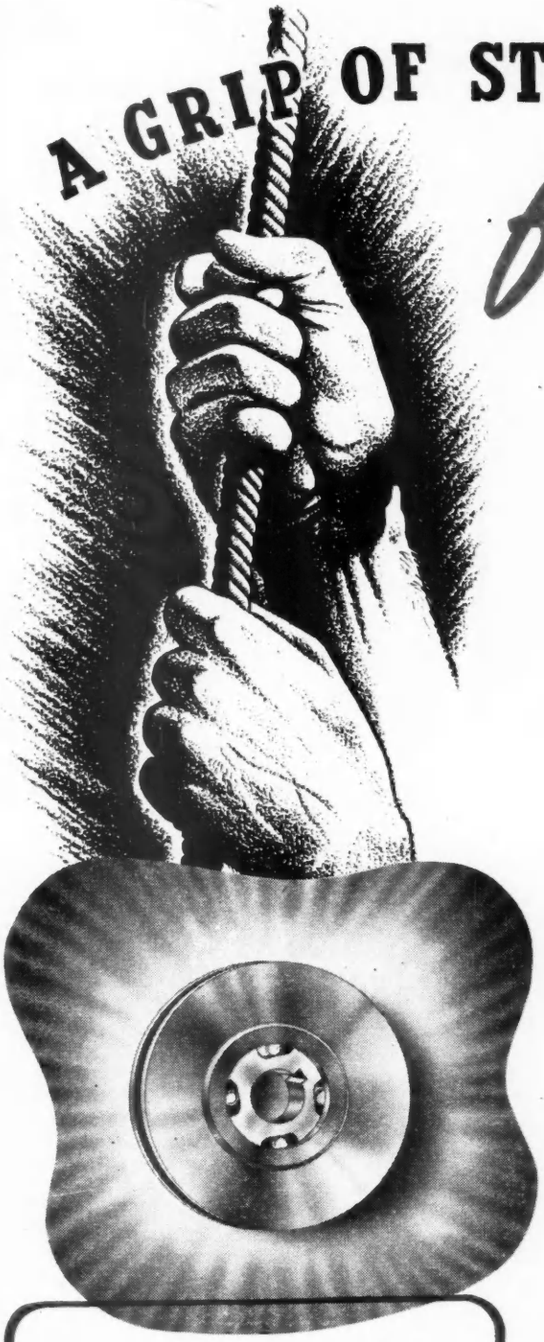
## ● WHY WAS IT?

*ANSWER . . . (To Question on P. 116)*

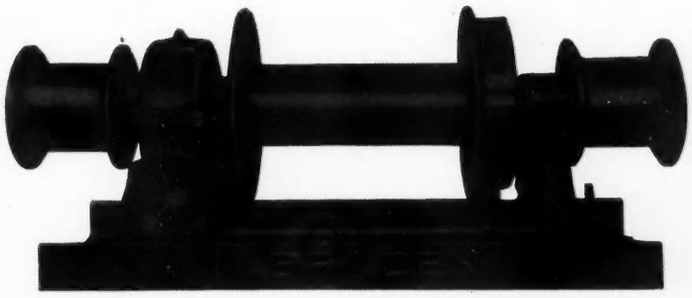
**Earle, when he was the first highway commissioner of Michigan, ordered the construction of the first strip of rural concrete highway. It was in 1908, and it was a mile road alongside the Michigan State Fair Grounds. Scoffers dubbed him "Crazy Earle" but later he became known as "Good Roads Earle, the Father of Modern Highways."**

*(Another Cartoon Quiz is on P. 120)*

# A GRIP OF STEEL *for Safety...*



Like a grip of steel the NEW BRADEN OIL COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE keeps suspended loads under perfect control at all times. Braden developed this SAFE Oil Cooled Automatic Brake with positive action. It is standard equipment on all M Series Braden Winches with capacities of 12,000 to 100,000 pounds. It is fully adjustable and automatic and will give years of trouble-free service.



**The New Model M12-18B**

Safe working Load 25,000 lbs. Recommended for use on 1½, 2, and 2½ ton trucks. It has as standard equipment, the NEW Oil Cooled, Fully Adjustable, Automatic Safety Brake.

**THE BRADEN OIL COOLED FULLY ADJUSTABLE AUTOMATIC SAFETY BRAKE**

***BUY BRADEN - They are Safer***

**BRADEN WINCH COMPANY**
1001 East Admiral Boulevard

**BRADEN** *Winches*

**TULSA 3,** Oklahoma

## New Metro Bodies Feature Accessibility

PRODUCED for the time being in one body size to expedite production, the new Metro extra loadspace bodies feature refinements in design which are said to aid the mechanic as well as the driver. The first units available will be the redesigned 9½-ft. all steel Metro body, 70 in. high wide and 67½ in. high, inside measurements, with 280-cu. ft. of payload space.

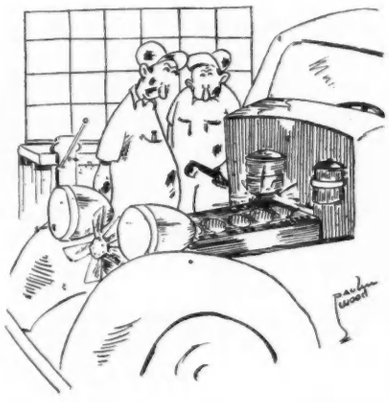
Refinements in the new Metro body reduce the time needed for access to the engine, with further provision for complete removal of the engine cover in a matter of seconds. The height of the engine cover has been raised for easier accessibility in checking spark plugs, distributor, etc., and also to provide a more convenient height of work space for routemen who use the engine cover as a desk. Access to battery, master brake cylinder, clutch, etc., has been further simplified, and the cover over the radiator filler cap has been enlarged.

The most radical body change eliminates the platform lining apron below the floor level, except at the side door wells, where the apron is provided with an easily removed cover plate. This change makes the elimination of body dents below the floor level as simple as bumping out fender dents in a conventional unit.

Further saving of mechanic's time is expected to result from dividing the lining of each side panel into upper and lower sections, instead of the former one-piece sections. As most accident damage occurs in the lower section of the side panels, this change will shorten the access time by almost half.

Added protection against the destructive effects of grit, dirt, dust, and moisture has been provided by spraying the underbody and all exposed underpaneling with a protective waterproof coating that still retains its flexible character after it reaches its final set.

The front doors now operate on ball-bearing rollers, in place of the former bearing-metal-impregnated slides.



**"That valve ain't done nothing for so long it must be drawing unemployment insurance!"**

## COORDINATED MAINTENANCE

(CONTINUED FROM PAGE 51)

brackets. Note if bushings are badly worn.

6. If necessary set front wheel stops.
7. Tighten king pin draw keys if necessary.
8. Examine brake and clutch pedal supports.
9. Check tightness of transmission fastenings, emergency brake hanger brackets, power take-off, etc. Tighten if necessary.
10. With a bar, check companion flanges for play. Note if repairs are necessary.
11. Tighten universal joint bolts.
12. Check joints for wear.
13. Check rear spring clips, bolts and nuts. Tighten if necessary.
14. Note broken spring leaves, overload pads, helper spring leaves, etc.
15. Tighten torque rods, radius rods, etc.
16. Tighten differential carrier to housing.
17. Inspect cross members and side rails for cracks and loose bolts or rivets. Tighten loose bolts. Note loose rivets.
18. Tighten cab and body fastenings.
19. Inspect exhaust pipe, muffler and tail pipe for leaks.
20. Check brake linkage, nuts and cotter pins. Make corrections where necessary.
21. Pack front wheel bearings.

Getting back to the standard forms, two types of daily reports, one for passenger cars and half-ton units (Fig. 6) and one for larger units are filled in daily by each shop and forwarded to the superintendent's office. These reflect the daily activity of each vehicle including the miles covered, using department, description of work, driver's name and company permit number. A master dispatcher's sheet also provides instant information concerning the whereabouts of each vehicle and even this is amplified by the use of brass tags, corresponding to the company vehicle number and hung on individual hooks, when the vehicle is not in use and carried by the driver when the truck is on the road.

A daily gas and oil report (Fig. 7), kept by the pump man, shows the amount added to each vehicle, together with the mileage run. This sheet is tabulated in the superintendent's office and transcribed to a similar monthly sheet which serves as a quick guide to the overall efficiency of the vehicles.

### Outside Maintenance

BETWEEN inspection periods, necessary maintenance for vehicles located in small communities and not normally housed in company garages is handled by a designated service station in the community. This includes washing, gasoline, oil, minor repairs and sometimes lubrication and is covered by a blanket requisition on the station covering a three-month period.

Each time the driver receives service he signs a delivery receipt in triplicate which shows the vehicle number, the date and the speedometer reading. The driver receives one copy which he sends to our headquarters office immediately. The dealer sends his copy attached to his bill at the end of the month.

Bills are not passed for payment until both the driver's and dealer's

(TURN TO NEXT PAGE, PLEASE)

## ● WHAT DOES IT MEAN?

*ANSWER . . . (To Question on P. 120)*
**The spark plug is either too hot for the particular engine or the fuel mixture is too lean.**

*(Another Cartoon Quiz is on P. 124)*

## COORDINATED MAINTENANCE

(CONTINUED FROM PAGE 123)

copies have been received. Gasoline, oil, etc., shown on these matching delivery receipts are entered on the vehicle's master record card. And repairs performed on the vehicle are checked when the unit comes in for its next regular inspection.

In most instances, it is necessary for the drivers of these remotely located vehicles to come into headquarters once a month to obtain materials and file reports. In these cases, the vehicle is left at the garage for periodic service while the driver makes his contacts with other company departments. If a major overhaul is required, the driver is given another vehicle which he uses until the work is completed. A garage helper then delivers the repaired vehicle and brings back the spare.

### Major Maintenance

For major maintenance, the Richmond rebuild shop holds the key. Here engines, transmissions and rear ends are rebuilt and kept in stock along with a full line of accessories. When one of the outlying shops foresees the need for a new unit, it requisitions one from the central shop, or when it gets in a jam it sends a hurried call. Usually before day's end a replacement is on the way in one of our company vehicles which through close coordination with the chief dispatcher we often find is heading that way anyway.

For all major repairs the same work order mentioned above is used. It provides space for necessary instructions, material used and labor time. In recent years, shop labor has not been charged against the individual units but is pro-rated on a fixed basis among all vehicles. Any outside labor, however, and this includes reboring and crankshaft regrinding at the central shop, and major body work, frame straightening, extensive front end checks, etc., for all shops depending in degree upon the equipment available at any given garage, is charged against the individual unit.

And while we are on the subject of major overhauls, a word about our engine experience. Although it is obvious that no fixed rule or general

(TURN TO PAGE 127, PLEASE)

## COORDINATED MAINTENANCE

(CONTINUED FROM PAGE 124)

average may be drawn, our experience with the lighter units indicates a pattern somewhat as follows: At approximately 40,000 miles the first engine job usually consists of new rings, new standard size bearing inserts, valves refaced and ground, and new seat inserts if needed. This is the job our two-man teams can do in 4½ hours, while the engine stays in the truck. The second job, usually occurring between 70,000 and 90,000 miles consists of a complete engine overhaul. Engine is removed and a rebuilt unit installed within a matter of hours. In the rebuild shop the engine is taken down, rebored or relined, fitted with new pistons and rings, valves refaced, shaft ground to .010 undersized and fitted with proper sized bearings, valves refaced, new inserts installed and ridges reamed. Accessories are carefully checked and exchanged for shop-rebuilt units if needed. One mechanic spends most of his time on these accessory rebuild operations.

### Traveling Supervision

MY OWN particular job in the setup calls for making the rounds of our 14 garages on an average of once every two weeks. We feel that this degree of both supervision and cooperation also pays big dividends. If a particular shop is in trouble for lack of parts or speedy cooperation from the home base, I hear about it first hand. If, on the other hand, a shop is behind the eight-ball I learn about that, too. And the rear end of my company car is often relatively full of spare parts consigned to various shops along the way.

### Centralized Records

AS EVERY inspection report, every work order, every gas and oil report is completed, it is forwarded daily to the central supervisor's office in Richmond. I saved this subject till the end for I know it is a bugaboo among many operators. The answer to the whole problem lies in the hands of one capable secretary who does all the posting (in addition to other secretarial duties) and a standardized visible index card file for every vehicle. Daily gas and oil reports are posted on temporary monthly recapitulation forms (Figs. 8 and 9), and then posted at the end of each month on the permanent card file, which reflects first of all a complete description of the vehicle (Fig. 10), including even a photograph of the unit and its cost broken down by chassis and body components and figured on a net basis that includes the trade-in allowance when the vehicle is sold. License and insurance data are also shown.

On the reverse side, the monthly operating cost of the vehicle is broken down on a basis of gas and oil, tires and tubes, parts and labor, miscellaneous and total cost, plus speedom-

(TURN TO NEXT PAGE, PLEASE)

## ● WHO IS IT?

***ANSWER . . . (To Question on P. 124)*** **George W. Mason, president of Nash-Kelvinator. In the past he has been associated with Studebaker, Dodge and Chrysler.**

***(Another Cartoon Quiz is on P. 128)***

## COORDINATED MAINTENANCE

(CONTINUED FROM PAGE 127)

eter reading, miles traveled, cost per mile and general remarks. At the bottom there is an annual total, and space for our year-end calculation with regard to anticipated trade-in which normally would occur at the five- to eight-year intervals, depending upon the size and type of vehicle involved.

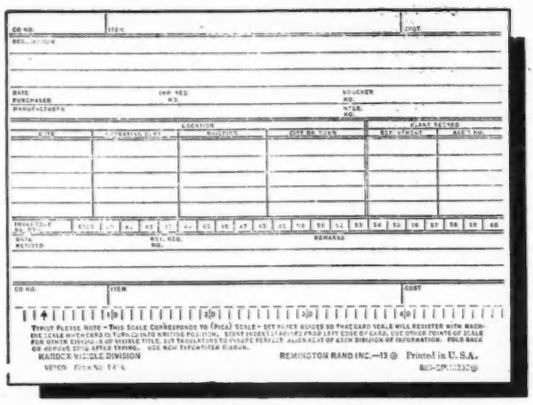


*Fig. 11. A complete record of each piece of shop equipment is kept on these 5 x 3 in. visible index cards which show cost data, shop location, purchase date, etc. It is an unusually handy method of knowing where you stand on shop equipment items*

A complete record of each piece of shop equipment is also kept in another and smaller visible index file (Fig. 11).

What does it take to accomplish all this; what does it cost to *know* what the fleet is costing and accomplishing? That's why I put emphasis on the female employee mentioned above. Her salary is the answer. Our superintendent's office consists only of the boss, myself, and the secretary who handles all our insurance and license problems and the important task of okaying bills for the financial department to pay. Not a very big overhead, do you think, for a fleet of 650 vehicles?

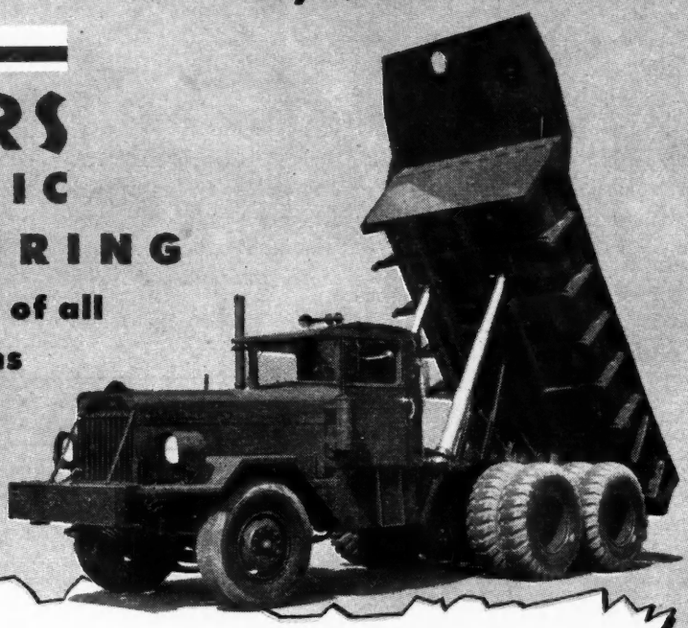
*END*

*(Please resume your reading on P. 52)*

## STERLING MOTOR TRUCK CO., INC. REPORTS:

# VICKERS HYDRAULIC POWER STEERING

**Relieves the Driver of all Steering Strains**



The chassis illustrated is one which has been developed for off-the-road operations and built to carry 30 ton payloads. Chassis of this type are called upon to operate over rough terrain under adverse conditions, demanding the most efficient steering mechanism available. For that reason, we equipped this chassis with the Vickers Power Hydraulic Steering Booster, which relieves the driver of all steering strains and makes it possible for him to work long hours without exerting undue effort.

This excerpt from a letter by the Sterling Motor Truck Co. mentions the advantages of Vickers Hydraulic Power Steering to the driver but it does not indicate how easily and conveniently this equipment can be applied to most existing chassis designs. The separate and compact power cylinder (booster) is connected to the drag link at one end and the chassis frame at the other; it is controlled by the pitman arm. The existing steering gear is not altered.

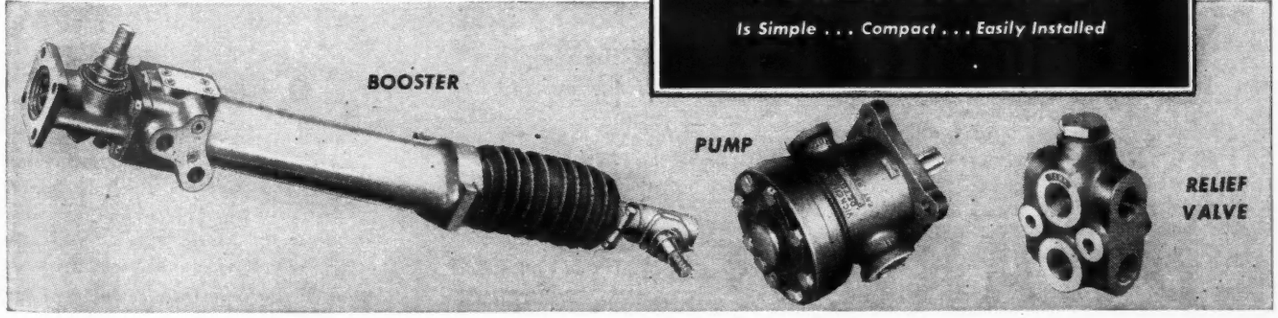
There are many other advantages of Vickers Hydraulic Power Steering. Write for Bulletin 44-30 which gives all the facts.

**VICKERS Incorporated**
**1418 OAKMAN BLVD. • DETROIT 32, MICHIGAN**

*Application Engineering Offices:* CHICAGO • CINCINNATI • CLEVELAND DETROIT • LOS ANGELES • NEWARK • PHILADELPHIA • ROCHESTER ROCKFORD • TULSA • WORCESTER

1890

**VICKERS HYDRAULIC POWER STEERING**
*Is Simple . . . Compact . . . Easily Installed*



## OUTLOOK ON TIRES

(CONTINUED FROM PAGE 41)

for truck tires, cotton is out unless the textile industry improves the product so that it can compete with rayon in performance. The gains from rayon in heat dissipation and overall strength are so marked that it will be used exclusively in truck tires until a better product comes along.

### Nylon Not Satisfactory

NYLON has not proved satisfactory thus far. It has strength, but tends to "grow" in the tire, weakening it. Nylon also is far more expensive and even if it performed satisfactorily, costs too much at present. Other textiles are constantly under study for tire cord, but at the moment nothing looks promising enough to be a factor in the foreseeable future.

### Wire Cord Possibilities

SO FAR as wire cord is concerned, there is a division of opinion in the industry as to its merits. Only one company has a good word for it, and is now running fleet tests. The principal objections voiced by other company engineers is that they know of no wire that will stand the fatiguing action of tire flexing, that pressure must be maintained so high to combat excessive flexing that maintenance costs on equipment mounts and drivers complain, and that wire cord tires are too costly for practical purposes. The company currently developing wire cord truck tires states that pressure carried is about 10 lb. more than normal and that the tire would cost from 35 to 40 per cent more, but that its principal advantage is resistance to blowouts and longer life. At best, the wire cord possibilities can be said to be an open question.

### The Price Situation

ALTHOUGH the tire industry intends to request higher prices for its products, to offset the added costs of recent 18½-cent-an-hour wage increases, it does not appear likely that truck tire prices will be greatly affected, at least for very long. With the tremendous capacity built up during the war and with supply and demand rapidly coming into balance, the normal forces of competition will come into play and should hold prices in check. This is not a prediction, but is certainly a possibility. On the other hand, passenger car tires will not be in sufficient supply for many months yet, and prices probably will follow OPA ceilings pretty closely for some time.

Reduced tire costs for truck operators will come largely through the better tires at no increase in price, tire engineers say. While it is diffi-

(TURN TO PAGE 132, PLEASE)



## ● WHO SAID IT?

*ANSWER . . . (To Question on P. 128)*

**Lt. Gen. Brehon B. Somervell, who as head of the Army's Services of Supply was responsible for this country's vast procurement program during the war.**

*(Another Cartoon Quiz is on P. 132)*

# Special to Fleet Owners!

## FRAM OFFERS 90 DAY ROAD TEST

### At No Cost Unless You Save Money, Overhauls, Repairs!

*You can't lose* when you equip your fleet with the amazing new Fram Filcron oil filters! Put 'em on—test them on the road for 90 days—and if you're not convinced that Fram Filcrons save you many times their cost in repairs, overhauls and maintenance, your full purchase price is promptly refunded!

**Why Fram Can Make This Unusual Offer**

Fram Filcron filters are more than just oil filters. Filcron gives you "*Micronic Filtration*"—the trapping of abrasive particles as small as one micron (.000039 of an inch) in size. Thus, Filcron filters keep oil physically, visually clean*, reduce motor wear, save you money.

**Tested And Proved By Army And Navy**

During the war both the Army and Navy used millions of Filcron filters and cartridges—in every climate, under the most difficult conditions—the most rigorous test to which any filter could be subjected! Now the revolutionary Fram Filcron is back from the battle fronts, ready to do a job for you. Contact your jobber today and install Fram Filcrons all around. If your fleet is already filter equipped, install Genuine Fram Replacement Cartridges to get the most out of present filters. There's a Fram cartridge to fit 'most every type of filter. FRAM CORPORATION, Providence 16, R. I., *In Canada:* J. C. Adams Co., Ltd., Toronto.


**Certain heavy-duty oils, due to the detergent additive used, will turn dark in color almost as soon as put into the engine. Where such oils are used, filters are more essential than ever before and cartridges must be changed regularly. Follow the advice of your oil company.*

# FRAM Filcron Filter

## THE MODERN OIL & MOTOR CLEANER

## OUTLOOK ON TIRES

(CONTINUED FROM PAGE 130)

cult to pin anyone down on how much better tires are now than they were before natural rubber content was increased, the general cautious opinion was that mileage should be improved from 10 to 50 per cent, depending on the type of operation. Operators who have misused their tires by overloading, excessive speed, underinflation, and similar practices stand to gain the most, strangely enough. This is because the principal advantage of crude rubber over synthetic is its ability to dissipate heat and stand more abuse.

### Safety Tires and Tubes

THE tire industry does not look for a marked trend toward use of the so-called safety tube or the puncture-proof tube or tire in truck operations. The safety tube has no particular advantage in normal operations where high speed is not a factor. About its only practical application is on high speed runs where the life of one or two men might be endangered in case of a blow-out.

The self-sealing tube also is not considered of practical value for most truck operators. While it might be of some value in avoiding delay due to puncture, initial cost is high and because of extremely heavy construction it generates too much heat.

The butyl tube, on the other hand, is considered the best yet devised because of its ability to hold inflation with a minimum loss of air. Its tear-resistant qualities also are considered excellent. Principal problems now are obtaining adhesion at the splice and at the valve, and difficulty in getting enough butyl to make all the tubes required. The adhesion problem is being overcome, and production of butyl is expected to increase so that eventually there will be enough. However, at present some of the larger truck tubes are being made again of natural rubber.

### Wider Rims, Larger Wheels

A DEVELOPING trend toward wider rims, larger diameter wheels, and larger tires on over-the-

(TURN TO PAGE 134, PLEASE)

## OUTLOOK ON TIRES

(CONTINUED FROM PAGE 132)

road trucks is a move in the right direction toward lower tire costs, tire engineers say. For several years, truck manufacturers favored the smaller truck wheel because of advantages to them in lower production costs, decreased weight, and a lower center of gravity. They also have been slow to adopt the wider rim because of the fear that operators would overload to a degree that the truck would be taxed beyond its capacity, resulting in unsatisfactory performance. However, because of promotion by wheel and rim manufacturers, bolstered by the experience of truck operators, the manufacturers now are trending back toward the larger wheel and wider rim.

Principal advantage of the larger diameter wheel is that tires give longer mileage and run cooler. The tire required costs a little more, but the increased price is more than offset by savings in tire wear, tire men say. They point out, however, that in some operations, the larger wheel may not be practical unless consideration is given to the gear ratio of the truck. In hilly country, for example, the operator will have to determine whether he will stay with smaller wheels and the same gear ratio in order to avoid excessive gear changes, or whether to use the larger wheel and specify a different gear ratio in his trucks.

Ideal rim width, according to studies, is about 70 per cent of the inflated tire diameter. On some trucks, this has previously been as low as 58 per cent and on others ranged from 62 to 67 per cent. Advantages of the wide rim is that the same size tire gives a straighter sidewall with better distribution in flexing, a flatter tread, and a more stable vehicle because there is less rocking and weaving.

*END*

***(Please resume your reading on P. 42)***



**"All I know, it's some crackpot scheme to get the soldiers home quicker."**

## ● WHICH IS IT?

***ANSWER . . . (To Question on P. 132)***

**Soy beans. It is estimated that at least a half bushel of soy beans goes into every Ford car or truck. Oil from soy beans is used by Ford for lubrication. Soy beans are used in the enamel finish and in various plastic parts such as steering wheels, horn buttons and gear shift knobs. Ford has thousands of acres of soy beans under cultivation in his experimental farms.**

***(Another Cartoon Quiz is on P. 136)***

Below—an inspection bench in the Broaching Department, and in the big illustration—the New Britain Torque Tester at work measuring the toughness of these Tools...actually breaking them under tremendous pressure

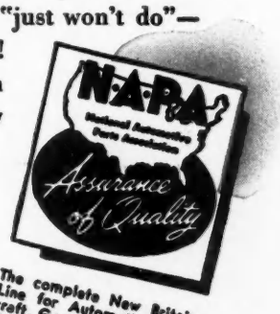
# Breaking Perfectly Good TOOLS Scientifically

## to give you Mechanics Hand Tools that make money

Every day—beautiful, glistening New Britain Tools . . . Tools as fine as any mechanic ever handled . . . are offered up on the high altar of SAFETY—guillotined for YOUR protection! The New Britain Torque Tester shown above is a hard bitten, cold blooded judge of Tool perfection. It registers to the fractional ounce of strain the ultimate capacity of a Tool's ability to "take it". It's the final, positive proof that the Tool New Britain puts in your hands is RIGHT!

New Britain Hand Tools are not alone money makers of the first order—they're knuckle and job insurance for you as well. From the time they start as a rough piece of selected alloy steel, they must pass countless tests and inspection after inspection. Every step of their manufacture is controlled, checked and rechecked.

Ask your NAPA Jobber's salesman to show you this *quality tested* line. Every Tool in it has been engineered for the future—they're tomorrow's Tools TODAY! Once you've used one, any other tool "just won't do"—they're that good! The New Britain Machine Co., New Britain, Conn.




The complete New Britain Line for Automotive, Aircraft, General Maintenance & Production Needs is sold by leading Jobbers.

# New Britain

GREATER STRENGTH • BETTER FIT **HAND TOOLS**

## SUPER SHOP FOR SOUTHERN CARRIER

(CONTINUED FROM PAGE 39)

ing to maneuver around other equipment. The top half of each door is all glass and above the door is an unbroken line of openable windows 4 ft. high and 147 ft. long. Over the partition, between the main shop, the engine rebuild shop and stock room, is a similar line of unbroken windows affording an unusual degree of daylight and ventilation for the entire working area.

At the right of the service bays, in a section labeled body and tire shop, we have embeded two stringers of reinforced concrete 30 ft. long, 3 ft. deep and 18 in. wide. This is our trailer jig, fitted with iron eyelets below small metal plates which fit flush with the floor and spaced at 18 in. intervals. Between the stringers and the adjacent concrete floor are expansion joints, so that we end up with a permanent and perfectly true jig for ironing out any kind of trailer troubles, regardless of how damaged the unit may be.

The trailer is rolled in over the jig without removing wheels or landing gear. Then by using a combination of hold-down clamps and hydraulic jacks we can twist the frame just about any way that may be needed. The jig also comes in mighty handy for drawing down new or reworked trailer tops. With a few short cables and sheet metal straps, plus turnbuckles, we can pull the top down really tight before it is anchored to the side frames.

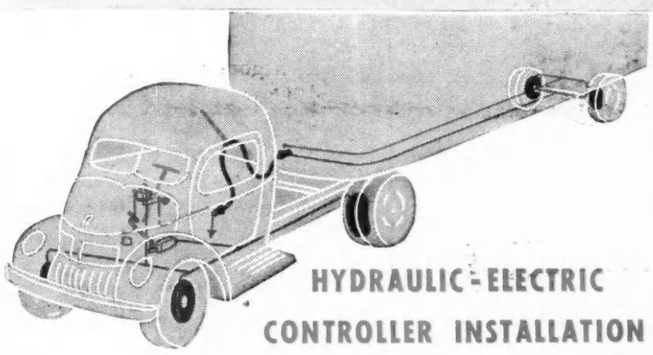
### Doors at Both Ends

NOTE that this body shop, in common with the adjacent washrack, lubrication pits and paint shop, has doors at both ends, greatly facilitating the handling of tractor-trailer combinations or the spotting of trailers without the necessity of having to back them in. Note, also, that washrack and grease pits are separated from the main shop by a solid wall, as in the paint shop, acting both as a fire stop and as an aid in maintaining uniform heat during the winter. Some of the folks up top-

(TURN TO PAGE 140, PLEASE)

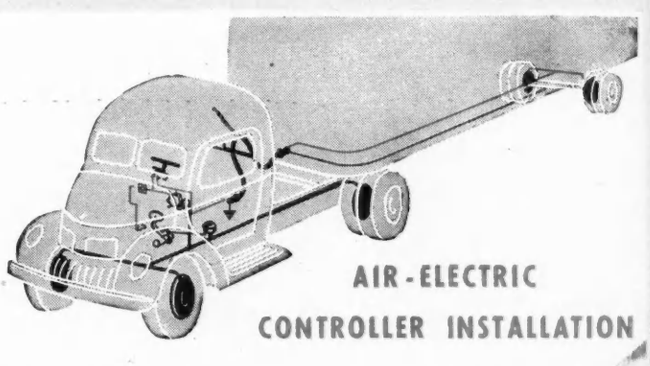
# BRAKE ACHIEVEMENT...

## Synchronizes Either Type of Tractor Brakes with Trailer Electric Brakes so Foot Pedal Operates ALL Brakes Together



HYDRAULIC-ELECTRIC CONTROLLER INSTALLATION

*Controller is easily and quickly fitted into tractor's hydraulic brake line.*



AIR-ELECTRIC CONTROLLER INSTALLATION

*For tractors with air brakes, the Controller installation can be made with equal speed and ease.*

## FOOT PEDAL PRESSURE CONTROLS BRAKES ON *Both* TRACTOR AND TRAILER

**WARNER**
**ELECTRIC BRAKES**

## SUPER SHOP FOR SOUTHERN CARRIER

(CONTINUED FROM PAGE 136)

side, north of the Mason-Dixon line, may think its always balmy down here, but it isn't. Our winters are short, but they get plenty cold for open air operations.

There is nothing particularly significant about the washrack and grease pits, other than that the latter are fully lighted and fitted with air and water lines. The greasing equipment will be portable. The size of the grease pits is also noteworthy, being 3 ft. 6 in. wide and 40 ft. long. The paint shop is fully enclosed, fitted throughout with adequate and explosion-proof lighting and a powerful suction fan. A small filter on the roof will be ample to cut down damaging clouds of paint spray as the area is entirely free of surrounding buildings or equipment.

Coming back to the specialized phases of the shop, we laid particular emphasis on our washroom which will incorporate locker space for each employee.

### Dual Purpose Machine Shop

NEXT is the engine rebuild shop which doubles in brass for what might have been a separate machine shop. We decided, however, that for a fleet of our size the two operations could be combined. Hence, transmissions, rear ends and brake drums are also serviced here. Major equipment in this room will include a hydraulic arbor press, drill presses, bench grinders, adjustable hone, valve refacer and seat grinder, a metal shaper and that most valuable of all pieces, a good-sized general purpose lathe. Our lathe is even fitted with a special attachment that handles brake drum work. Most of this equipment we already own and are already using in our present shop, though we are the first to admit that it has been pretty badly crowded there.

Most of our engines are fitted with cylinder liners. What boring we have to do is farmed out along with our crankshaft grinding. We have had wonderful success in utilizing shafts through three grindings, to .030 undersize, then building them back up again to standard.

Periodic maintenance and engine tune-up will be handled in the general service bays. Hence, all our testing equipment, electrical, vacuum, exhaust analyzers, etc., are portably mounted and will be housed in and drawn from the parts room.

Next is the ample stock room which requires no particular mention, other than its overall size and the convenient combination service window and counter-desk from which the parts man on duty may issue parts and make the necessary bookkeeping entries with a minimum of confusion. We were fortunate in accumulating, just before the war, a considerable amount of such hard-to-get items as

(TURN TO PAGE 142, PLEASE)



## ● WHAT'S NEW?

*ANSWER... (To Question on P. 136)*

**Aluminum. Housings, hubs and brake shoes are all made of aluminum.**

*(Another Cartoon Quiz is on P. 142)*

## SUPER SHOP FOR SOUTHERN CARRIER

(CONTINUED FROM PAGE 140)

standard and undersized bearings. Our experience during the war leads us to believe that a reasonably well equipped parts room will continue to pay dividends in the long run.

Adjacent to the stock room is the electrical repair shop, which more accurately should be termed the accessory overhaul shop. Here we will rebuild everything from generators, starters and distributors to fuel pumps, carburetors and air compressors. We are fortunate in having a couple of very good specialists in this work. We have equipped them with a good all-purpose electrical test stand and all the miscellaneous tools needed for the job.

I saved reference to the little area marked "wood and metal shop" until the last for this is a department we are justly proud of. It doesn't take much room but is a big factor in our operation. Basically equipped with band saw, table saw, metal hacksaw and gas and electric welding outfits this shop can produce things we never dreamed of a few years ago.

Naturally, this undertaking got started with minor repairs and fittings. From there we progressed into frame reinforcements, special fifth wheel mounts, major body repairs and finally the fabrication of a number of complete all-metal bodies.

*END*

***(Please resume your reading on P. 40)***


**"Are your sure this meat is really fresh?"**

## CONTINENTAL DIESEL

(CONTINUED FROM PAGE 76)

and at a definite rate, the compression being sufficient to ignite the fuel when it is injected into the heated air in the turbulence chamber. During this phase, a portion of the fuel becomes atomized and starts to burn in the turbulence chamber. However, a definite quantity of fuel is directed into the Dyna-Cell where burning of fuel follows, peak pressure develops, and considerable energy is stored. This peak pressure is absorbed by the structure of the cell, instead of being imposed upon the piston and its related reciprocating parts.

An instant later the pressure charge in the cell is released at the proper phase of the power stroke, at a controlled rate through the metered orifice of the cell. It will be noted that the axis of the cell is at an angle with respect to the fuel injection nozzle. This is done to prevent blasting of the nozzle for one thing, but what is of even greater importance, the angularity is such as to produce a swirling effect over the top of this piston so as to increase turbulence and thus effect more complete combustion and a cleaner exhaust. This arrangement is said to act at the most effective crank angle. Following the power stroke, the burned gases are exhausted on the upstroke in conventional four-stroke sequence.

### Mechanical Features

THE drop-forged crankshaft is heat treated and dynamically balanced, counterweighted, and of seven-bearing type. Main and con-rod bearings are of heavy-duty steel shell replaceable type, lined with bearing alloys suited to the specific application. Con-rods are drop-forged and heat treated. The camshaft is drop-forged and heat treated and mounted on four replaceable steel-backed babbitt lined bearings, on the transportation models and on the KD-330, TD-427, RD-572. On the GD-157, HD-260, and HD-390, the camshaft is a semi-steel casting, heat treated. Cylinder blocks have full length water jackets with a water distribution header. The cylinder head is of cast iron and includes the overhead valve assembly. It is of interest to note in this connection that this design permits the practice of exchange cylinder head assemblies, thus simplifying the fleet operator's problem.

Easily removable wet cylinder liners of copper-chromium alloy are supplied as standard on the GD-157, HD-260, and HD-390; while dry liners are fitted on the RD-572.

Pistons are of aluminum alloy, of solid skirt type with a full floating pin. Intake valves are of alloy steel; exhaust valves are of XCR steel used in conjunction with alloy steel seat inserts.

(TURN TO PAGE 146, PLEASE)



### ● WHO WAS IT?

*ANSWER . . . (To Question on P. 142)*

**Theodore Roosevelt. The ride occurred in September, 1902, at Hartford, Conn. The car was followed by a horse-drawn vehicle—just in case of an emergency. One of the newspapers commented, "Roosevelt's display of courage was typical of him."**

# Compare Heater Performance AND YOU'LL INSTALL South Wind

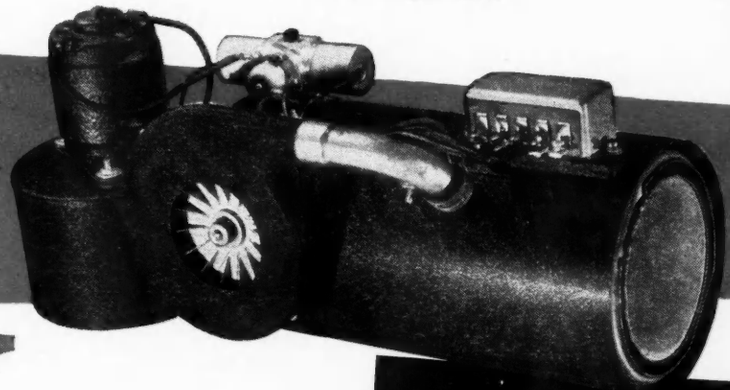
✓ **MORE HEAT** . . . up to 20,000 BTU's per hour . . . *even when engine is cold.*

✓ **REGULATED HEAT** . . . in any amount desired down to less than 20% of rated output.

✓ **AUTOMATIC CONTROL** . . . maintains temperature *in the truck* at the desired level without attention from driver.

✓ **BETTER VENTILATION** . . . more than 100 cubic feet per minute . . . keeps drivers alert, and windows clear of fog and frost.

✓ **ALWAYS READY** . . . maximum output within one minute after heater is turned on . . . not dependent on engine operation.



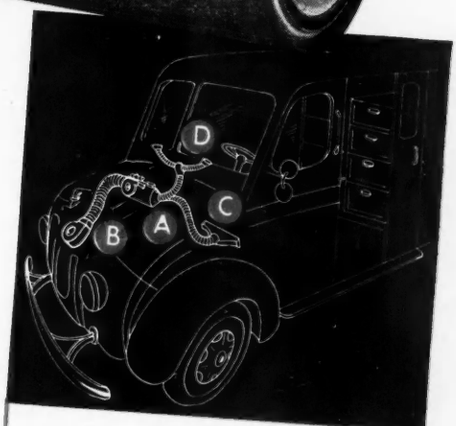
You get *RESULTS* like these...

**You Protect Perishable Cargos . . . Reduce Accidents . . . Protect the Health and Increase the Safety and Efficiency of Drivers . . . Get Quick Starts in Cold Weather.**

The new South Wind Deluxe Truck Heater employs the famous "sealed flame" principle—contains flame and gases within a hermetic chamber welded out of the finest stainless steel.

The unit is completely flexible in its application. Why not talk over your heating problem with our engineers? No obligation. South Wind Division, Stewart-Warner Corporation, Department 930, Indianapolis 7, Indiana.

Another Product of STEWART WARNER




**One of Many Ways the South Wind Deluxe Can Be Installed**

A. New South Wind Deluxe heating unit. B. Blower to force in fresh air. C. Hot air duct to driver's compartment. D. Hot air duct to defroster.

# South Wind DELUXE TRUCK HEATER

REG. U. S. PAT. OFF.

## CONTINENTAL DIESEL

(CONTINUED FROM PAGE 144)

The water pump is leak-proof with a patented carbon seal, with the shaft mounted on ball bearings. It is installed on the front end of the cylinder block, driven by V-belt. The cooling system is automatically controlled by thermostat and suitable by-pass.

The engine has full pressure lubrication with an oil pump of spiral gear, submerged type of generous capacity. A built-in oil cooler and oil filter are standard equipment on the transportation models; and on the KD-330, TD-427, and RD-572.

The conventional road draft tube crankcase ventilation system is standard equipment, but the Donaldson valve installation can be made at the customer's option.

Fuel injection equipment is supplied by American Bosch and Ex-Cell-O in sizes suitable for the various engines, with metered fuel supply, and built-in governor with torque control. Two fuel oil filters are supplied for two-stage filtering.

Standard generator is rated 12-volt, 40-amp. capacity, but an optional one of 55-amp. capacity can be supplied. The starter has a No. 2 SAE mounting flange and is of the 12- or 24-volt type to suit requirements.

On truck and bus models the engines are arranged for three-point mounting with a trunnion at the front while rear mounting depends upon the type of flywheel housing selected by the customer.

On industrial engines the mounting depends upon the application. In addition, power take-off and reduction gears are available to suit the requirements.

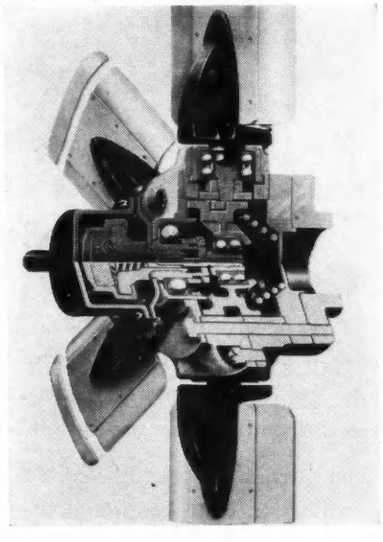
According to the manufacturer the Red Seal diesels can operate with any lubricating oil that can be used on similar engines. However, better results are promised with the use of a good heavy duty detergent type oil, preferably of high VI.

For winter operation, Continental recommends the use of diesel fuel with a cetane number in excess of 55 for easier starting, and a pour point at least 10 deg. Fahr. lower than the prevailing atmospheric conditions.

*END*

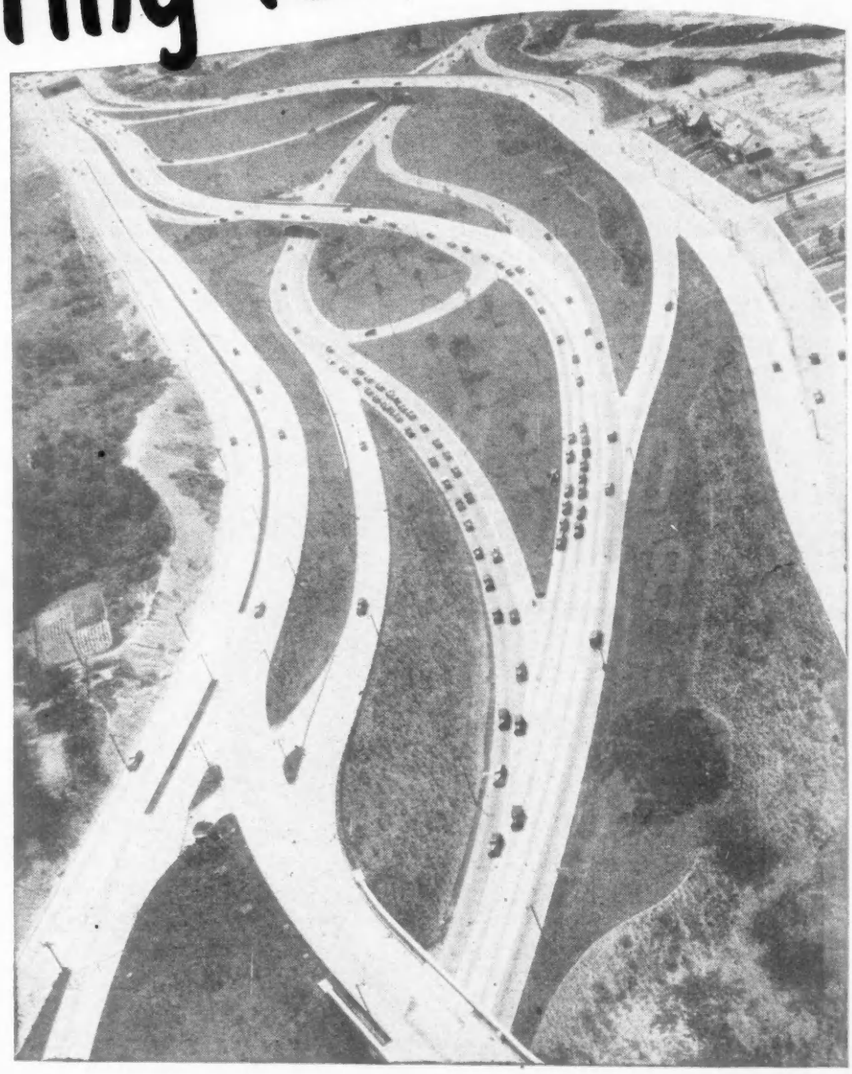
***(Please resume your reading on P. 78)***





A front-operating adapter design of the thermal power element in the Evans Thermo-Control Fan has been engineered to simplify installation of the fan in existing engine mounts when necessary clearances are available. To install the new model, it is only necessary to remove the old fan from the fan hub and remount the Thermo-Control Fan with the correct mounting flange to fit the hu

# Meandering for a reason



THIS road might have been charted from a meandering and lazy river.

We all know that, actually, the turns—the twists and underpasses—are there for a purpose.

**The designer had one thought in mind, *Going!* Going faster with greater safety.**

This science of going has brought forth a nation-wide network of super-highways to carry the trucks and buses which are constantly required to increase loads and step up speeds. As *going* has become more and more important, American Brakeblok has kept pace with its specialty—the twin science of *stopping*.

For many years, it has been the business of The American Brakeblok Division to solve tough brake problems.

**Today, a majority of the trucks and buses that flash over the highways use American Brakeblok Brake Lining as original equipment. The men who drive them count on American Brakeblok lining for safe stops.**

Maintenance men and fleet operators prefer American Brakeblok brake lining because experience has shown them American Brakeblok engineering and research cut operating costs.

American Brakeblok Heavy Duty Brake Lining is available in three types—for all makes and models of vehicles. The use of brake lining with the correct frictional qualities for each type of brake system gives greater safety and a lower cost per stop. Naturally, the quality of all three types is the best.

*Stopper says:* "Whether you operate a truck, bus or passenger car, you'll get more smooth, safe stops with American Brakeblok Brake Lining.

NAPA Assurance of Quality

Master stocks of American Brakeblok products are maintained at 38 NAPA warehouses, serving jobbers everywhere.

American Brakeblok

BRAKE LINING

AMERICAN Brake Shoe COMPANY

AMERICAN BRAKEBLOK DIVISION
DETROIT 9, MICHIGAN

## I SUGGEST . . .

(CONTINUED FROM PAGE 57)

per month to winners. Borderline suggestions may be reviewed by department heads concerned and the executive office to determine the advisability of their adoption and the amount of the consequent award.

We have tried out a plan of having a board pass upon the suggestions, but it did not work out satisfactorily and failed to accomplish the results that we expected. The board plan delayed the processing of the suggestion since the members always concluded their deliberations by asking the advice of the department concerned anyway.

Beginning in 1945, we discontinued our anonymous number-and-stub system on suggestions and had the suggesters sign their names. This number-and-stub system did not prove satisfactory because many winners did not claim the awards and also because we found that we could not contact the suggester in case further information was needed. We think that the system of signing of names to suggestions is more convenient and more favorably received by those who submit their ideas.

### Processing the Suggestions

THE company has a form shown in Fig. 2, upon which its employees may make their suggestions.

As soon as the suggestion comes in, it is either typed on Form 410 shown in Fig. 3 (8½x11 in.) and original filed for future action, or the original suggestion may be stapled to the aforementioned form and routed to offices for comment by those affected.

Simple suggestions are typed with a proper number of copies (usually about three) to be circulated so that they may be commented upon by those who are likely to be interested in its adoption. Complicated ideas (drawings, forms, etc.) are routed directly to departments concerned and a "follow-up" slip is placed in my file so that I can expedite things if necessary.

We answer each suggestion and tell the employee why his suggestion could not be adopted if no award is made. We send the checks to the Unit Supervisors for the presentation of checks to the winners who are under their jurisdiction. Names of award winners are published in *The Freighter*, our company publication.

One of the bulletins used by the company to stimulate contributions is shown in Fig. 4.

### Typical Accepted Suggestions

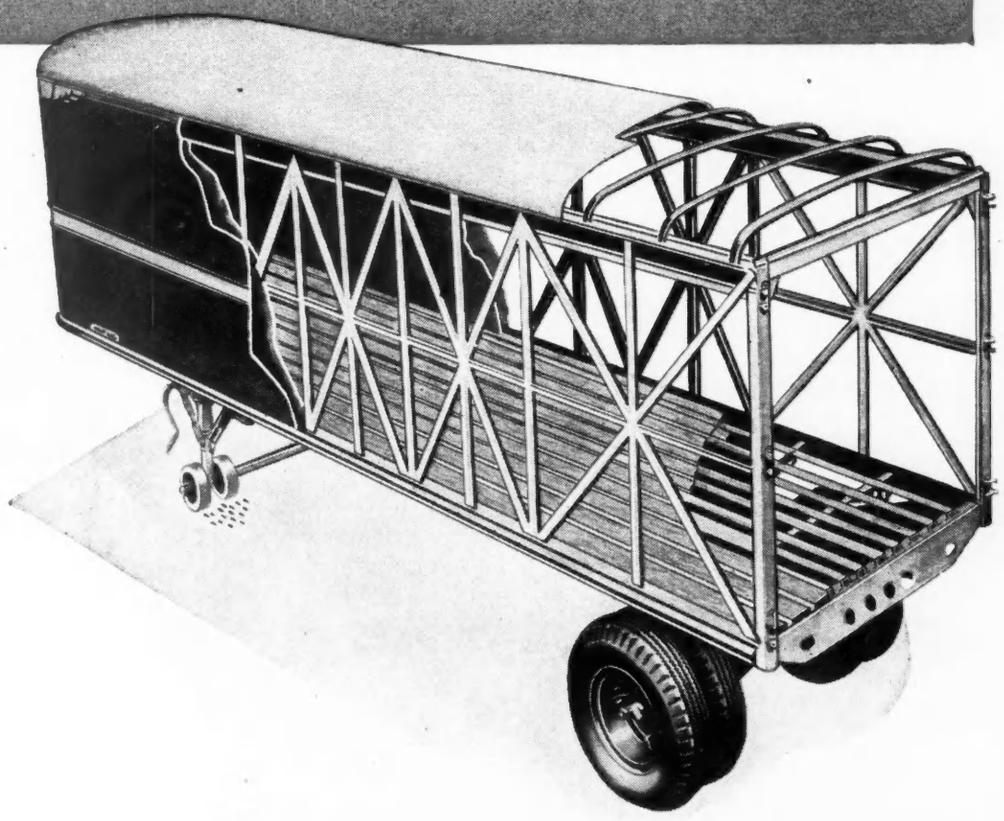
FOLLOWING are a few of the suggestions made by our employees that have won prizes:

Vern Arnett of the Portland Traffic Department made a miniature map of Portland shown in Fig. 1. He suggested that they be issued to new drivers to assist them in locating terminals. We gave him $20 for this idea.

Ralph Hutchens, Portland transport operator, suggested more careful surveys of the small towns in which terminals are located. He pointed out that, in the past, some of our terminals have not been conveniently located so that it has resulted in lost time for drivers. Superintendents were advised to check carefully with Operation Supervisors

(TURN TO PAGE 150, PLEASE)

# When it's Aluminum...



## The skeleton pays dividends

POUND FOR POUND, MORE PAYLOAD! That's what you get when Reynolds Aluminum alloys are used in truck and trailer bodies. For these alloys are strong as structural steel, *yet weigh only ⅓ as much.*

Think what that means to the operator! Every pound saved in deadload (and that means plenty on the average job) is a pound added to revenue-producing payload.

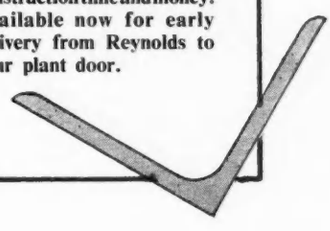
Operating costs, too, are proportionately lower per ton-mile. Maintenance costs are reduced, since aluminum bodies are rustproof.

*Yes, when it's aluminum* . . . the skeleton . . . in fact the whole body, pays dividends.

*Find out now*! Whatever your interest, Reynolds will gladly work with your engineers. Offices in principal cities. Phone nearest office . . . or write Reynolds Metals Company. Aluminum Division, 2533 South Third Street, Louisville 1, Kentucky. *Detroit address: 1010 Fisher Building.*

**Structural Shapes**

**Strong alloy aluminum rolled structural shapes save construction time and money. Available now for early delivery from Reynolds to your plant door.**



**Consider Aluminum . . . Consult Reynolds**

REYNOLDS METALS

# REYNOLDS ALUMINUM

*The Great New Source of*

INGOT · SHEET · SHAPES · WIRE · ROD · BAR · TUBING · PLATE · FORGINGS · CASTINGS · FOIL · POWDER

## I SUGGEST . . .

(CONTINUED FROM PAGE 148)

before changing terminal locations. This constructive idea won him $10.

John J. Dixon, transport operator of Burns, Ore., won a prize by suggesting that we should "roll" our trailer frames so that the front wheels, when cramped too far under the frame, would not result in injury to the tires.

Wallace Yost, one of our service men here in Portland, won a prize for his suggestion regarding seat cushions on our trucks. He proposed that we paint truck numbers on our cushions so that they can be relocated easily when they have been removed from trucks. The suggestion was adopted by our Maintenance Department and seat cushion trouble has nearly ceased to exist.

Another winner was Glen Avis. He pointed out that our operators dislike seeing a red star indicating a chargeable accident after their names on an accident poster, if they were not blamable for it. Hereafter blue stars will signify non-chargeable accidents and red, chargeable ones. As in the past, gold stars will continue to indicate "No Accident."

Jack Allison of the Portland shop offered a suggestion for a bulletin which showed a man playing the Consolidated Freightways Game of Skill who was striking a pile driver with a huge sledge hammer in front of a big indicator with the phrase "Your Suggestion May Hit the Top. If *YOU* THINK IT'S GOOD, TELL ALL ABOUT IT."

Dick Fraley, a Medford driver salesman, convinced the General Sales Department that it would be advisable for the driver-salesmen to present Christmas cards to their shippers. The company is making plans to follow out his suggestion.

A. C. Newbauer, a Minneapolis freight agent, grew tired of looking for his old December calendar while his new calendar hung before him in the month of January. He suggested that a detachable December fly leaf accompany the New Year calendars, and won a $10 award.

Glen Nelles, a Portland stockroom clerk won $10 by suggesting an aid for the driver-salesman who has wearily adjusted his tail gate several times before finding the suitable chain link to make his tail gate level with the docks. Nelles suggested that the tail gate level link be painted yellow.

### Plan Builds Employee Interest

WE HAVE found that the Suggestion Box has been very helpful in building up interest in the company's welfare. The question of whether the value of the suggestion to our company outweighs the expense incurred has been discussed at various times in our management meetings, and, so far, the "Pros" predominate.

I believe a suggestion box to be a healthy institutional asset, but a company must understand that some expense is connected with the administration of it and officials must not expect all of the ideas submitted to be visible money-savers. At any rate, I think that it has helped us materially in building initiative and loyalty in our growing organization.

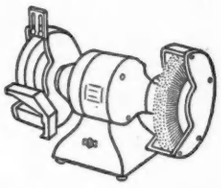
*END*

*(Please resume your reading on P. 58)*

# They Clean Up Dirty Jobs in a Jiffy...

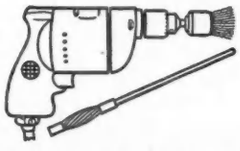
*Brush off Rust, Old Paint, Road Tar. Scuff Tires and Tubes for Repairs. Remove Carbon at Top Speed*


**FOR PORTABLE GRINDERS:** "Whirlwind" Brushes come in 4″ to 8″ wheel sizes; made of .014″ wire for rough cleaning, .0118″ wire for high-speed buffing, .005″ wire for fine finishing and burnishing.



**FOR BENCH GRINDERS:** "Whirlwind" Brushes come in six wheel sizes from 4″ to 12″, in three thicknesses, and in .014″, .0118″ and .005″ wire. Adaptors fit them to almost any arbor.

**FOR PORTABLE SANDERS:** "Whirlwind" Wire Cup Brushes come in 4″, 5″ and 6″ sizes, made of .020″ and .022″ wire for tough cleaning jobs. Brush has ⅝″, 11-thread bushing; threads on Sander spindle.



**FOR ELECTRIC DRILLS:** Black & Decker makes 4 types of Carbon Cleaning Brushes; 11 sizes of Valve Guide Cleaners. Arbors for using small Wire Wheel Brushes with Drills also available.

BLACK & DECKER "WHIRLWIND"* Wire Brushes, in wheel and cup types, save money, muscle and man-hours on many a tough job.

**For General Shopwork,** they quickly remove rust, scale, oxidation, old paint, light weld spatter, grease or road tar . . . clean the chassis and under fenders . . . scuff tires and tubes for recapping, vulcanizing or repairs . . . do high speed buffing and fine burnishing or finishing. You can use "Whirlwind" Brushes on 'most any grinding spindle . . . and particularly on Black & Decker Bench Grinders, Portable Grinders and Sanders.

**For Carbon Cleaning Jobs,** Black & Decker makes four types of Carbon Cleaning Brushes and eleven sizes of Valve Guide Cleaners. Teamed up with a Black & Decker ¼″ Drill, they make fast work of removing carbon from engine blocks and cylinder heads, cleaning valve ports and guides—and leave a bright, burnished surface that resists accumulation of new carbon.

Order Black & Decker "Whirlwind" Brushes and carbon cleaning tools from your Black & Decker Distributor. For catalog address: The Black & Decker Mfg. Co., 63½ Pennsylvania Ave., Towson 4, Maryland.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC TOOLS

*Trade Mark Reg. U. S. Pat. Off.

## 92% FAVOR CARDS

(CONTINUED FROM PAGE 36)

answered by the old proverb, "You cannot have your cake and eat it too." If maintenance supervisors really want large, clear illustrations, if they really want a complete story to cover any typical maintenance operation, then it is going to take a 14 x 18 card to tell the story. Furthermore, it will require both sides of the card, and lot of hard work, to get the whole story on this size card.

On the other hand, if supervisors without actually sizing up the problem are going to voice the opinion that it would be nice to have all these big clear illustrations and complete texts on a little 9 x 12 or 12 x 14 cards, or some other odd dimension, it is just wishful comment. Small cards are certain to beget small illustrations, difficult to read, and any accompanying text will be so brief that it will be of little help. We will wind up with something which is practically worthless as an instruction and its only appeal will be that it meets the desires of those who think they would like to have instructions on a small sheet to fit present files.

### Filing Not a Problem

THE matter of filing is simple. The White Company supplies a nice sheet metal box with its cards. In our service stations, we use a simple sheet metal box for our lubrication instruction cards. Any shop can make a suitable box of sheet metal or plywood. This is no problem—the real problem is to get the Standard Practice Instructions.

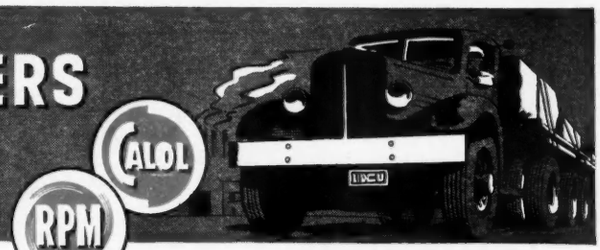
The SAE Standard size of 14 x 18 was not arrived at casually. There was much hard work done in actually preparing instructions, and proving that it would be difficult to prepare the best instructions with the best of illustrations on a card any smaller than the standard arrived at. Of course, size of card stock from which cards could be cut was considered in determining size, and 22 x 28 card stock permits the cutting of two cards 14 in. wide. Extra grip stock is necessary in order to treat the card with any one of various preparations to make them grease-proof. Thus, the 14 x 18 card is an economical cut, and experience to date is most convincing that the card is as small as we dare to make it, and still have space to adequately present the typical maintenance operation.

I write as I do because I feel that maintenance supervisors across the country should realize that, if we ever are going to get from all manufacturers better maintenance instruction of the type under consideration, it is absolutely vital that we bury our minor differences of opinion as to whether these instruction cards should be a little larger or smaller and to get together and ping for the SAE Standard that was established only after a lot of hard work. If every operator and maintenance supervisor will do this, and if each will call on his individual suppliers to participate in this program, it will result in tremendous benefit to the entire industry; and to all of us who are struggling to raise the level of maintenance.

*END*

*(Please resume your reading on P. 37)*

# STANDARD ENGINEERS NOTEBOOK



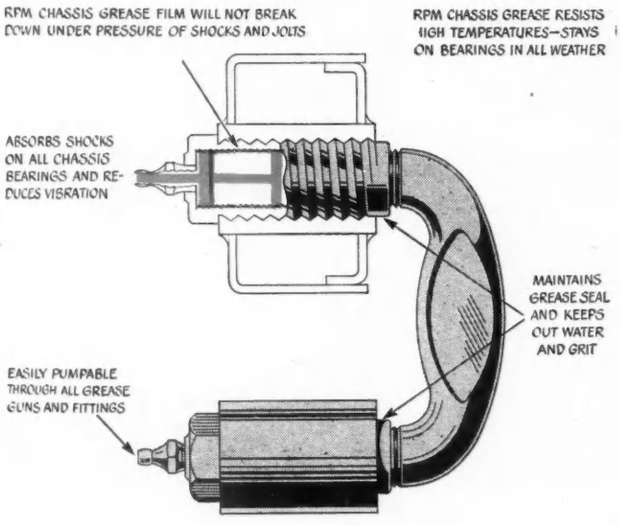

## Shock-absorbing grease reduces shackle wear

Because it contains a special stringiness agent that keeps a tenacious lubricant film on shackle and other chassis bearings, RPM Chassis Grease will eliminate squeaks and cut wear to a minimum.

Besides using it on chassis bearings, many truck and bus operators lubricate heavy-duty tractor fifth-wheel bearing surfaces with RPM chassis Grease.

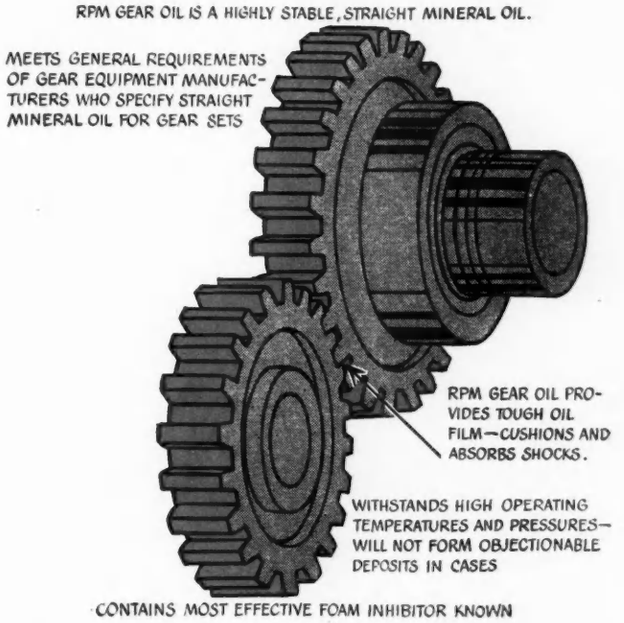
The tough lubricant film acts like a cushion. It absorbs countless shocks imposed on bearings and will not rupture even under an overload. This unusual ability also reduces vibration and makes vehicles ride smoother.

Highly resistant to heat and moisture, RPM Chassis Grease seals out water and grit on and at the edges of bearings. It may be applied easily in cold weather and protects vital wear-points in summer.




*U-TYPE SPRING SHACKLE*

RPM GEAR OIL IS A HIGHLY STABLE, STRAIGHT MINERAL OIL.




CONTAINS MOST EFFECTIVE FOAM INHIBITOR KNOWN

## Straight mineral oil meets gear-maker requirements

To meet the need for a high quality lubricant for certain transmission gears and other gear sets where a straight mineral oil is recommended, RPM Gear Oil was developed. It is made from the finest paraffinic lubricating oil stocks.

RPM Gear Oil deposits a tough lubricant film on gear teeth and bearings that prevents metal-to-metal contact in all operating conditions. It cools the surfaces and carries away heat. It extends gear and bearing life.

Because RPM Gear Oil is extremely stable, it minimizes trouble from objectionable deposits forming in cases. It eliminates foaming trouble because it contains the most effective foam inhibitor known.

RPM Gear Oil is made in three viscosity grades: SAE 90, 140, and 250. One of these grades will flow freely over gears and their bearings in every atmospheric temperature condition.

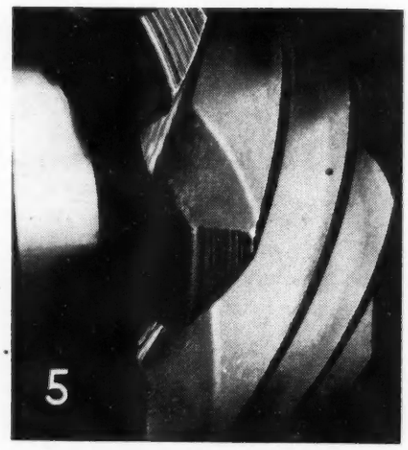
For additional information and the name of your nearest Distributor, write Standard of California, 225 Bush Street, San Francisco 20, Calif.; The California Oil Company, 30 Rockefeller Plaza, New York 20, N. Y.; The California Company, 17th and Stout Streets, Denver 1, Col.; Standard Oil Company of Texas, El Paso, Texas.

**FOR EVERY JOB A STANDARD OF CALIFORNIA TEST-PROVED PRODUCT**

## WARBORN GREASES

(CONTINUED FROM PAGE 70)

for all fleet operators. Gone will be the days of repeated gear failures and lack of oil stability; i.e., until the truck manufacturers design some new-fangled gearing—then we will have to start all over again to find the answer to suitable lubrication.






### Specifications and Standards

FOR the technically minded, Mr. Keyser says the new gear oil (2-105B) will probably contain fatty

(TURN TO PAGE 156, PLEASE)

# Every Fleet Operator and Body Builder should have THIS NEW BOOK

**It presents a wealth of evidence that it pays to travel light with Alcoa Aluminum**


**MAIL THIS COUPON TODAY FOR YOUR COPY**

**ALCOA**
FIRST IN
**ALUMINUM**

ALUMINUM COMPANY OF AMERICA
2139 Gulf Bldg., Pittsburgh 19, Pa.

Send me the new book giving performance records, design and fabrication data on Alcoa Aluminum for Truck Bodies.

Name_____ Title_____

Company_____

Address_____

## WARBORN GREASES

(CONTINUED FROM PAGE 154)

oil plus various combinations of sulphur, chlorine, phosphorous or lead soap. It will have to include a delicately-balanced mixture of a highly active anti-weld agent and a less reactive film strength or surface-active agent to pass both high speed and high torque requirements.

The Army found out early in the war that automotive greases were the neglected step-children of the industry. There were very few standardized tests on which to base selection for a given service and prediction as to performance was impossible. Now, all that has been changed, thanks to the CRC and to W. G. Ainsley, director of the Engineering Laboratory of the Sinclair Refining Co., who directed the work. Now we know how to measure the viscosity of all types of greases, how to prejudge grease specifications as to rust-inhibiting, winter use, oil separation, extreme pressure qualities, oxidation, torque loss and many other vital characteristics.

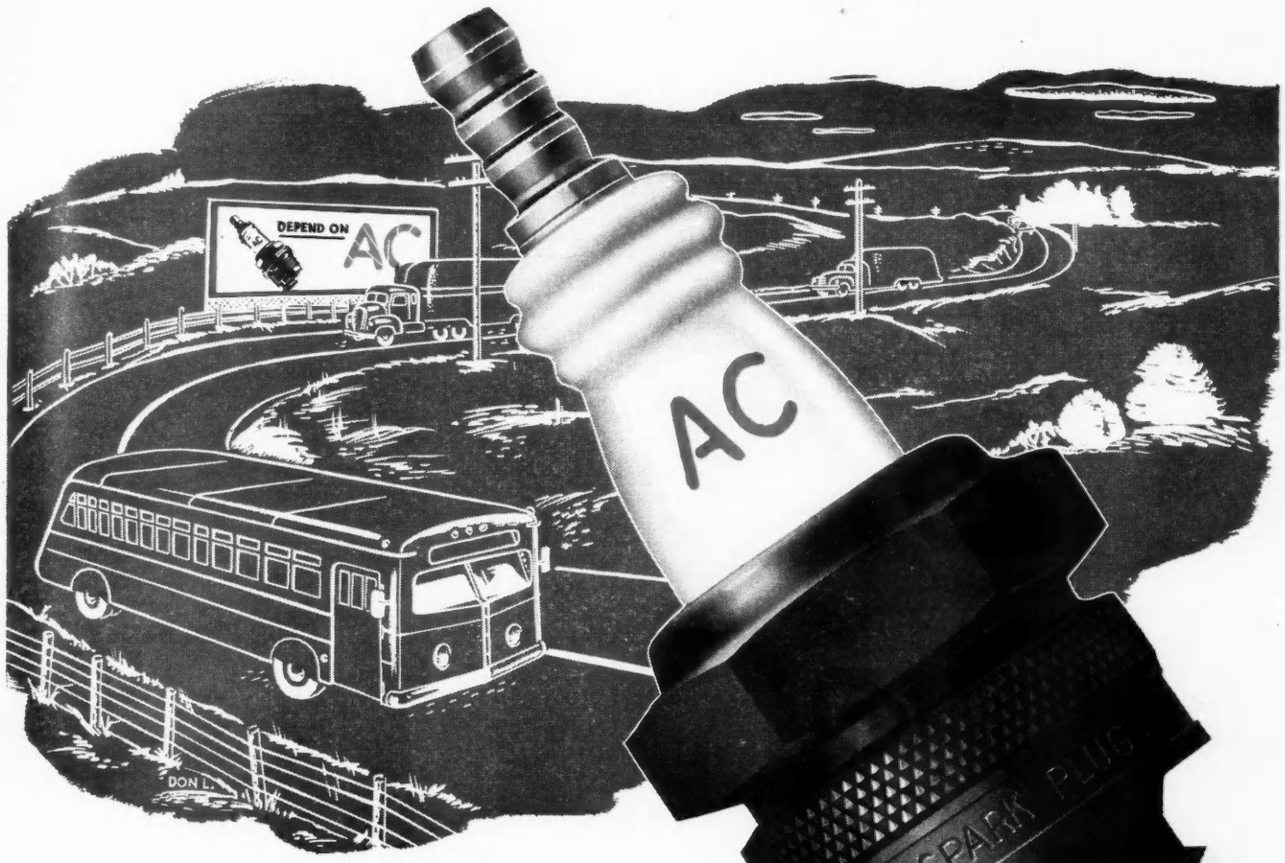
Standard tests have been established by the CRC which will definitely control the quality and performance of the grease fleet operators will buy; i.e., if the grease manufacturers adopt these tests originally designed to guide the U. S. Army in its purchases of grease. For example, the CRC wheel bearing grease test sets definite limits to: Amount of leakage from a bearing; loss of consistency; change of structure to a gelatinized or fibrous condition; separation of oil and/or soap; poorness of lubrication; and deposits of lacquer or gum on the bearings and races due to the presence of inferior raw materials. If a given grease is to satisfy the requirements of the CRC test it must be "excellent" to "good" in all of the previous specifications.

From the broad view, postwar greases should eventually be better products than were available before the war. As a direct result, maintenance needs of greased parts should decrease.

*END*

***(Please resume your reading on P. 72)***

### Classified Advertisement




*Reliability*

## IS YOUR BUSINESS AND OURS

Your reputation for reliability is bound up in the faithful performance of your rolling stock—just as AC's is built on the performance of its spark plugs.

That's why AC's up-to-the-minute studies in Heat Range — AC's collaboration with the engineers who design your engines — AC's experiments with fuels, ceramics and alloys are of actual cash value to you.

To be specific: AC offers you longer electrode life—wider Heat Range per plug—less fouling caused by engine wear—less soot and carbon—less oxide coating. AC can give you spark plugs that perform better over a wider range of operating conditions — and make full use of the fuel you use.

All this adds up to utmost reliability in spark plug performance — an important factor in assuring reliability in your vehicles.

AC

# SPARK PLUGS

**SEND FOR AC SHOP MANUALS**

**Field Service Dept., AC Spark Plug Division, General Motors Corp.**
**910 Mott Foundation Building, Flint 3, Michigan**

**Gentlemen: Please send me at once, no charge, the AC Shop Manuals checked:**

- ☐ HOW TO SERVICE SPARK PLUGS
- ☐ How to Service Spark Plug Cleaner
- ☐ How to Service Oil Filters
- ☐ How to Service Fuel Pumps
- ☐ How to Service Air Cleaners
- ☐ How to Service Speedometers
- ☐ How to Service Ammeters and other Instruments

CCJ-5

NAME_____

FIRM_____

STREET ADDRESS_____

CITY_____ STATE_____

## DIESEL FLEET'S PROGRAM

(CONTINUED FROM PAGE 53)

Everything was as it apparently should be and yet they seldom developed over 18 lb.

Bearing clearances by factory recommendation were .004 to .006. A conference with factory engineers over the piston breaking problem resulted in a recommendation to decrease these clearances to .002 to .003 to raise the oil pressure. This raised the pressure a little but not much. The injector nozzle burns a geometric pattern on the top of the piston. The piston usually cracked or a piece broke out in one segment of the pattern but never the same one in relation to crankshaft or connecting rods. Sometimes the piston cracked along the side.

There was some discussion as to a different type of piston on the theory that a stronger piston would withstand this breaking pressure. We tried unplated pistons. Unplated pistons using a clearance between piston and cylinder liner of .005 broke even worse than the plated piston and did not give as good service in other ways.

We returned to use of the plated piston, which we still use, and I returned to the theory that it was all a question of cooling and that the piston was not being properly cooled.

We had bought our first 4-cyl. engine by that time and I noticed that the gear ratio used on the oil pump inside the pan had been changed to drive the pump faster. The pump is driven by a chain. The ratio on the 3-cyl. engines was 8 to 39—the driving sprocket had eight teeth and the driven sprocket had 39 teeth. On the 4-cyl. engines the driving sprocket had eight teeth and the driven sprocket had 37 teeth.

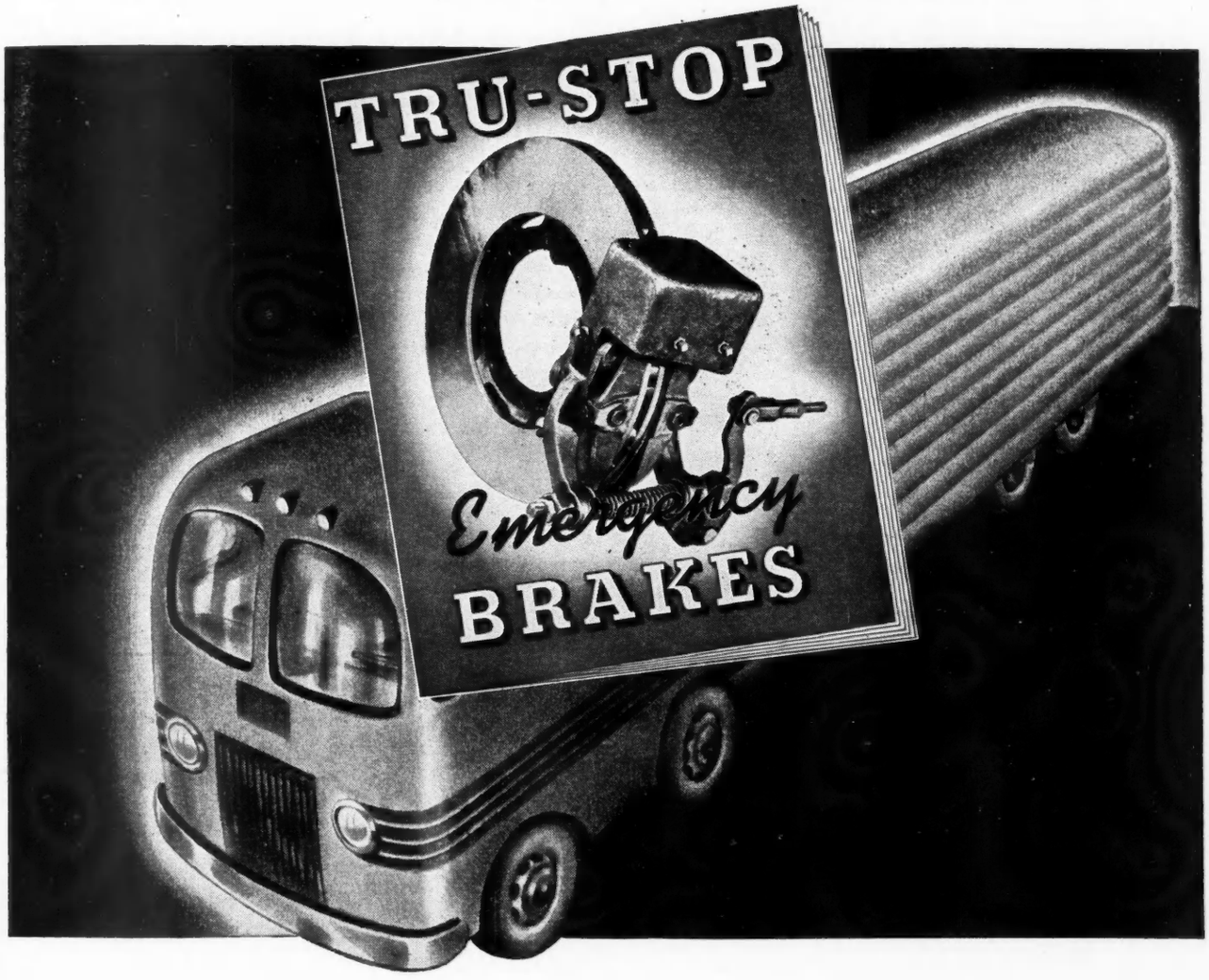
By changing the driven sprocket in the 3-cyl. engines to 37 teeth by merely replacing the old sprocket with the new one I got an oil pressure of 22 lb. at 2000 r.p.m.—and entire freedom from cracked pistons.

### Injector Problem Solved

THE crucial part of all diesel service is the smooth operation of the injector system. We seldom change or service injectors under one

(TURN TO PAGE 204, PLEASE)

# Write For Your Copy of *THIS BOOKLET*




This 12-page file-size booklet contains the important facts about TRU-STOP Emergency Brakes. You will want this information if you are buying or expect to buy new equipment. TRU-STOPS are the safer and more economical emergency brakes and this booklet tells you why. Write our Detroit Office.

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**AUTOMOTIVE AND AIRCRAFT DIVISION**
**AMERICAN CHAIN & CABLE**

TRADE MARK

*In Business for Your Safety*

## DIESEL FLEET'S PROGRAM

(CONTINUED FROM PAGE 158)

year. At one year, the injector will have given considerably over 100,000 miles of service without attention.

But, as the poet says, "It was not ever thus."

We had plenty of injector trouble to begin with until we began to realize that almost all of our trouble was due to water and dirt in the fuel.

Fuel tanks for a diesel system must have a return line, which means two lines into the tank. On our old style tanks the construction was such that the well in which these lines started filled with sand, water and grime from the road. As long as there were no leaks, this was not important. But sooner or later these connections broke and had to be repaired, and at this time some sand and water was sure to enter the fuel tank.

Since fuel lines are filtered for diesel engines this would not have been considered so important had not trouble with injectors kept cropping up.

Another thing this dirt did was to cause faltering and coughing engines, due to dirty strainer or dirty filter system, air pockets in the pressure side or plugged line. Cleaning the strainers and changing the filters stopped the trouble only temporarily, because the dirt and water kept coming in.

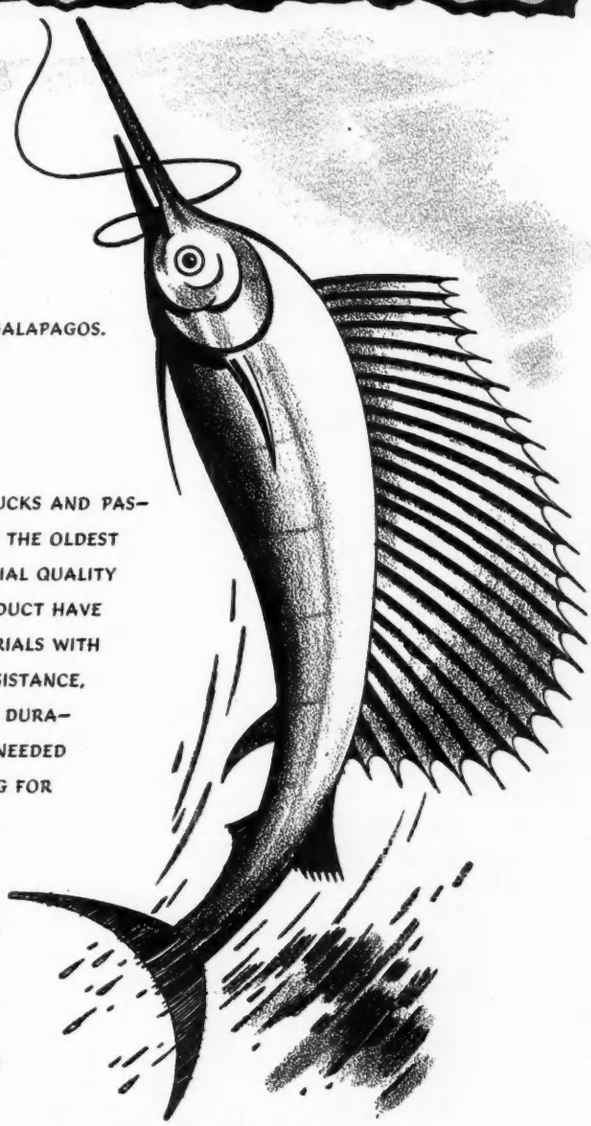
To stop the tank trouble we changed to different type tanks which were installed on all our tractors. We put on a steel saddle tank on which there is no place for dirt to collect.

This brought forcibly to our attention the importance of clean fuel. Plate type strainers have cleanable elements which need to be washed in gasoline about every 500 operating hours. These elements are easily damaged and may be ruined by the use of compressed air. This leads to leaving out elements, and an empty strainer in the line does no good. We made sure that all these were clean and in operating condition and then prepared to clean them as often as needed.

Next we made sure that all fuel filters were clean. As the filter clogs, pressure drops and the drop results in erratic operation of the engine.

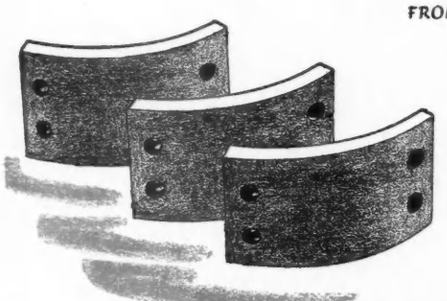
(TURN TO PAGE 206, PLEASE)

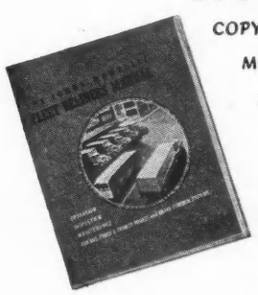
# Famous Stops



**THE WORLD'S RECORD STOP** FOR THE SWIFT, HARD-BATTLING PACIFIC SAILFISH (WITHIN 2 SECONDS AFTER BEING HOOKED IT STREAKS THROUGH THE SEA AT THE PACE OF 60 MILES PER HOUR!) WAS MADE IN 1938 AT CHARLES ISLAND IN THE GALAPAGOS. THE POWERFUL FISH, WEIGHING 190 LBS. WAS STOPPED WITH A 30-THREAD LINE IN 22 MINUTES.

**FAMOUS FOR SURE STOPS** IN BUSES, TRUCKS AND PASSENGER CARS, ARE JOHNS-MANVILLE BRAKE LININGS AND BLOCKS, THE OLDEST NAME IN THE FIELD. COMPLETE CONTROL OF MATERIAL QUALITY FROM MINE TO FINISHED PRODUCT HAVE PRODUCED BRAKE MATERIALS WITH EXCEPTIONAL HEAT RESISTANCE, UNIFORM FRICTION AND DURABILITY... GIVING THE NEEDED SPLIT-SECOND BRAKING FOR TODAY'S HIGH SPEEDS.





**STOP A MOMENT** AND WRITE FOR YOUR COPY OF THE JOHNS-MANVILLE FLEET RELINER'S MANUAL... 80 PAGES, PACKED WITH CHARTS, DIAGRAMS AND OTHER INFORMATION ON OPERATION, INSPECTION AND MAINTENANCE FOR BUS, TRUCK AND TRAILER BRAKE SYSTEMS. IT INCLUDES A STEP-BY-STEP PROCEDURE FOR RELINING BRAKES, THE CORRECT FRICTION MATERIALS TO USE AND THE OUTSTANDING DIFFERENCES BETWEEN VARIOUS BRAKE SYSTEMS. ADDRESS: JOHNS-MANVILLE, BOX 290, NEW YORK 16, N. Y.

**Johns-Manville**
**BRAKE MATERIALS**

JOHNS-MANVILLE JM PRODUCTS

• BRAKE LININGS • BRAKE BLOCKS • CLUTCH FACINGS

## DIESEL FLEET'S PROGRAM

(CONTINUED FROM PAGE 204)

When the outlet pressure is sufficient, the injectors get all the fuel they need regardless of whether the rack has turned the metering pins to idle position or wide open position. The excess oil flows back to the tank through the return tubing. This whole assembly must be kept clean.

The holes in the injectors are extremely small and, to get full power from the engine, all the minute openings must be open so that the fine spray sets up a definite pattern.

We established a definite cleaning period for strainers and filters, but still had some injector trouble due to dirty fuel. It was then that we discovered that there is a vast difference in fuel oil as far as impurities are concerned. It seems that it is more important in high-speed diesels than in their slow 300 r.p.m. brothers that turn dynamos and propel boats.

Anyway, we found an oil that seemed to be better for our use. We are able to run injectors for over one year without servicing.

A few months ago we were unable to obtain the oil we have standardized on, and picked up some in the open market. Almost immediately our old troubles returned and then disappeared as we changed to our regular fuel.

This is the point I want to make. The best place to stop the dirt and impurities is before the fuel goes in the tank, thereby giving the strainer and filter a lighter job to do. Dirty fuel has partly come about from an erroneous impression that you can burn anything in a diesel from soft coal to crankcase drainings.

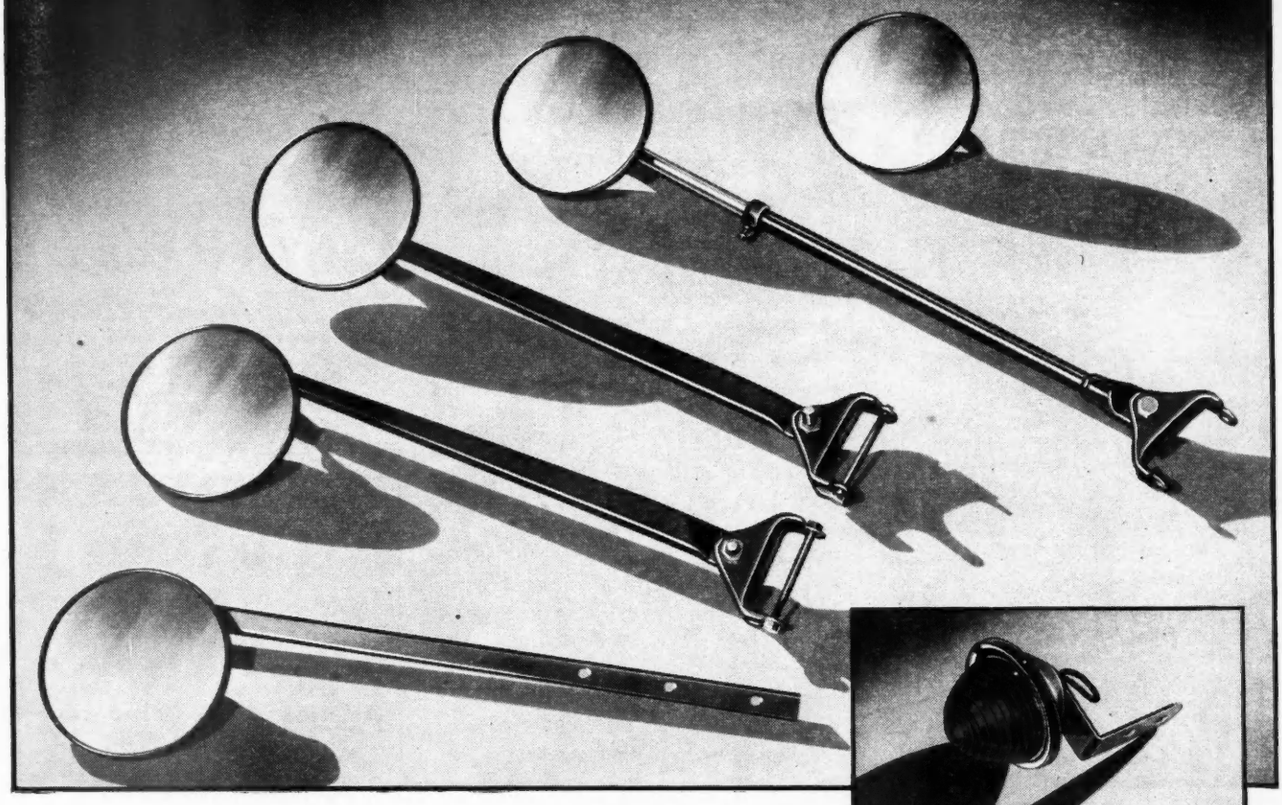
We do all our own work on the injectors and since getting a year's service from each set this volume of work has not been excessive for our small crew.

### Blower Maintenance

ANOTHER thing we have discovered is in regard to the blowers. Many operators consider these parts should remain in service until they develop troubles.

(TURN TO PAGE 208, PLEASE)

# NORLIPP REPLACEMENT TRUCK MIRRORS



## REPLACE ANNOYING "DISTORTED VIEW" MIRRORS

Get rid of that "headache teaser"—the rear vision mirror that's cracked, fogged, jiggly or otherwise a driver nuisance. The Norlipp replacement mirror is the heavy-duty, durable clear-vision mirror that is needed in its place.

Norlipp mirrors are carefully constructed, water-proof, with arms of unbreakable steel. Swivel ball joint either centered or off-centered to meet every adjustment requirement.

Telescopic arm adjustment on some models permits adjustment up to 28 inches—to afford vision around the widest truck or bus bodies.

Available as complete units with the necessary mounting screws or as replacement mirror heads in 5 or 6 inch diameters. See your Norlipp jobber for details or write us.

*• • • Norlipp clearance lamps and signal reflectors are of sturdy, rain and dust-proof construction. In several styles and sizes to meet every safety need.*

**THE NORLIPP COMPANY**

**5925 S. Lowe Avenue — Chicago 21, Illinois**

## DIESEL FLEET'S PROGRAM

(CONTINUED FROM PAGE 206)

If they are left too long in service they are a total loss when removed. A new assembly costs about $185. But what we found out is that all of them will run 80,000 miles without trouble and if they are taken out at that period and overhauled they can be rebuilt for between $5 and $6. That is a considerable saving. The overhauled unit can be fairly expected to turn in another 80,000 miles.

This brings us down to the governor. Nearly all truck line operators have more or less trouble with governors being tampered with by the driver.

The governors on our diesel engines are enclosed miniatures of the old ball governors that grandpa used on his steam threshing engine. This controls the rack that operates the metering pins. It is an easy matter for the driver to change the tension on the high speed spring, but he seldom knows that inside of this is the idling spring tension which needs to be set in proper relation with the other. If he knows it is there, he is seldom able to adjust it.

Consequently, changes are made in the high-speed spring tension which

(TURN TO PAGE 210, PLEASE)

# YOU'RE HANDICAPPED WITHOUT ALL FIVE


## GET ALL FIVE FACTORS IN HEAVY DUTY OIL, TOO

*1. Strong, Tough Film. 2. Detergency. 3. Dispersancy.*

*4. Resistance to Oxidation and High Engine Temperatures. 5. Non-Corrosive to Bearings.*

You need *all five* senses . . . and for really good heavy duty lubrication, an oil needs *all five* factors.

Most heavy duty oils will give you one or more of these factors. But with Wolf's Head Heavy Duty Oil you can be sure you'll get *all five*.

In addition, in Wolf's Head Heavy Duty Oil you get them in the perfect blend for outstanding performance and complete engine protection under all operating conditions. Even under overloads Wolf's Head remains unhandicapped . . . with extra quality to stand up for mile after mile . . . reduce engine wear . . . cut operating costs.

Find out what Wolf's Head *"five factor"* Heavy Duty Oil can do for your fleet. Write for a free copy of the Heavy Duty Folder. Wolf's Head Oil Refining Co., Inc., Oil City, Pa., New York 10, N. Y.

**LABORATORY CONTROL SERVICE**
*Gives fleet operators specific recommendations for their units, based on analysis of crankcase oil. Helps to establish correct drain periods, conserve engine life, reduce lay-ups—frequently reveals unsuspected engine troubles. Free and without obligation.*

# WOLF'S HEAD
## MOTOR OIL AND LUBES

100% Pennsylvania P.G.C.O.A. Permit No. 6

## DIESEL FLEET'S PROGRAM

(CONTINUED FROM PAGE 208)

sometimes causes the unit to become inoperative or at best causes it to lose its power.

We had a few drivers who tried it and when the news of their lack of success filtered around they never tried it any more.

We set our governors to give them 2000 r.p.m. which will give them a road speed of about 45 m.p.h.

Chief Freight Lines has its main offices and shop in Kansas City, Mo., and maintains service to Tulsa, Okla., by way of Coffeyville, Kan. Coffeyville is the halfway point and a fuel supply is maintained at this point in addition to one at Kansas City and Tulsa.

Under present operating conditions we are getting nine miles to the gallon, and the way it looks from here is that although all the new units being bought are 4-cyl. diesels, we will be able to get a million miles from our old 3-cyl. jobs.

*END*

*(Please resume your reading on P. 54)*

# the best brake is AIR!

BENDIX-WESTINGHOUSE GENUINE AIR BRAKES

—"and I can prove it!"

"*Sure the Best Brake is AIR—and the best Air Brakes are made by Bendix-Westinghouse! I can prove it by my drivers—they want Bendix-Westinghouse Air Brakes, not only for safety, but because they make their jobs easier. And I can prove it by my cost records too—and that's what counts with me. My service lay-ups are mighty few and far between—Air Brakes keep my trucks where they belong, on the road making money!*"

That's the kind of story you can get from almost any user of Bendix-Westinghouse Air Brakes. They know that they not only give their cargoes and drivers the safety of the world's safest power-to-stop, but at the same time make a saving in operating costs that's the same as money in their pockets. Get in touch with your Bendix-Westinghouse Distributor—he can show you how inexpensive it is to modernize your present equipment—or he will assist you in selecting, for new equipment, the right type of Air Brake for the specific job.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY • ELYRIA, OHIO

**Bendix-Westinghouse** WORLD STANDARD OF SAFETY

**AUTOMOTIVE AIR BRAKES**

Factory Branch — WESTINGHOUSE PACIFIC COAST BRAKE CO.

San Francisco • Emeryville • Fresno • San Jose • Los Angeles • Seattle • Spokane • Sacramento • Reno • Salt Lake City • Portland

## CCJ NEWSCAST

(CONTINUED FROM PAGE 102)

### BUDA ENGINE CATALOG

The Buda Co., Harvey, Ill., has recently published a 12-page catalog featuring its new line of "One-Sixty-One" Series Diesel engines for automotive, industrial, and marine service.

### BRAKE CATALOG AVAILABLE

Just released by the Automotive and Aircraft Division of the American Chain & Cable Co., Inc., of Detroit, is a 16-page catalog giving up-to-date information on the "air-cooled" brake for trucks and buses.

A copy is available by writing to the manufacturer at Bridgeport 2, Conn.

### THREAD REPLACEMENT

Aircraft Screw Products Co., Inc., Long Island City, N. Y., announces a new bulletin, No. 300, entitled "Heli-Coil System for Replacing Stripped Threads." It contains illustrated instructions for installing Heli-Coils in tapped thread repair work, as well as specifications and part numbers for the accessory tools recommended for American National and spark plug tapped threads. A copy is available upon request.

### TOOL CATALOG AVAILABLE

The Bonney Forge & Tool Works, Allentown, Pa., has issued a new 20-page catalog listing a selected collection of Bonney tools useful to the automotive field. A copy is available upon request.

*END*


# The Greatest Development in the History of Engine Protection

For years, research at Purolator was aimed toward one end . . . to develop the finest possible oil filter for automotive engines.

Just before Pearl Harbor we did it . . . created the perfect oil filter that effectively trapped every foreign substance in a car's oil right down to the size of a micron (.000039 of an inch).

Of course, the Armed Forces took all our production during the war, but now the Purolator Micronic Oil Filter is available for commercial vehicles.

With the Micronic Purolator on a unit, you can be sure that every bit of dirt, grit, grime or other abrasive in the oil will remain in the filter. Scored bearings and damaged cylinder walls will be a thing of the past.

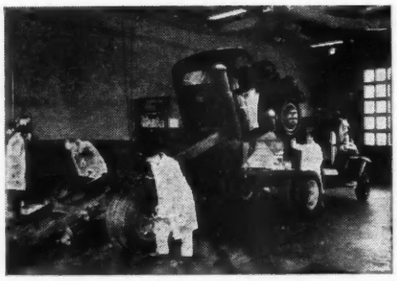
Get the details of this amazing new Purolator Micronic Oil Filter that means longer engine life and reduced upkeep for every kind of truck or bus. Purolator Products, Inc., Newark 2, N. J. In Canada: Purolator Products (Canada) Ltd., Windsor, Ontario.

**KEEP OIL FREE FROM ABRASIVES WITH PUROLATOR**

## PLANNED CLEANLINESS

(CONTINUED FROM PAGE 64)

converted most of its haulaway trailers for hauling war materials. It also handled driveaway delivery of thousands of military vehicles and, to a lesser degree, of commercial trucks. Now that new automobiles are being built, the familiar double-deck Sober haulaway again is a familiar sight on highway throughout the Middle-West.



One of the outstanding features of this company is its advanced concept of the important role played by modern facilities as a factor in efficient operation. The service shop at its terminal at Lansing, Mich., is a marvel of cleanliness, and order. It is compact in layout, and yet there is no appearance of cramping or crowding. Well lighted by a solid bank of windows along the sunny side and by the most modern overhead lighting, it is clean, bright, and comfortable, providing working conditions second to none.

Cleanliness in the shops and other installations is a religion with our entire staff. Floors are kept scrubbed so clean that you almost can eat off them. And V. J. Padgett, our general manager, says that it costs no more to keep the shop clean on a regular schedule than to let it get dirty and then have to work ten times a hard to pry the grease and dirt loose.

*END*

*(Please resume your reading on P. 65)*

SERVING THROUGH SCIENCE

*Comfort Engineered*
*for Sitting and Sleeping*

# COOL
## Because it's Porous!

Can you imagine blowing smoke through an ordinary sofa cushion or mattress!

But you can with Koylon Foam...as the pictures here prove. Yes, all it takes is a puff of smoke to give you an idea how *air* circulates through Koylon Foam.

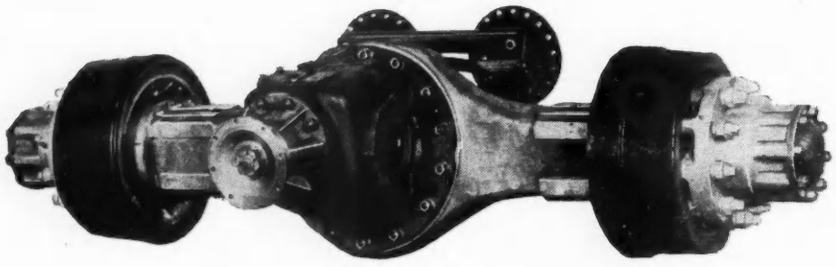
Actually, Koylon Foam "breathes"... absorbs air in millions of tiny, inter-connecting cells of resilient rubber latex—releases it on contact with the body. This constant recirculation "air-conditions" Koylon Foam... keeps it cool when the thermometer blows its top! And what a boon that proves when people have to sit around—or try to sleep—in hot weather.

This "air-circulating" feature is another *plus* that goes along with Koylon Foam's *matchless comfort.* And it's another reason why we say: If you sell "seats"—or "sleep"—better plan to sell Koylon Foam!

"U.S." Koylon FOAM

"U.S." KOYLON FOAM DIVISION • MISHAWAKA, INDIANA

UNITED STATES RUBBER COMPANY



## Aluminum Axle Housing Cuts Weight by 220 Lb.

A LIGHT-weight, heavy-duty truck axle with aluminum housing, hubs, and brake shoes has been brought out by the Timken-Detroit Axle Co., Detroit, Mich. The new development, called the "S-200-P," is said to mark the first time that aluminum axles have been offered as a standard line of equipment.

The aluminum rear axle is designed for heavy-duty hauling on highways and city streets in cities and states allowing over 18,000 lb. at the tires on the ground per axle. The "S-200-P" axle is available with two types of final drives: hypoid-helical double-reduction and 2-speed hypoid-helical double-reduction.

With aluminum construction, the "S-200-P" weighs 220 lb. less than the same unit equipped with malleable iron parts. In announcing the weight saved through the substitution of aluminum, Timken president Walter Rockwell said, "This reduction in unsprung weight should lengthen tire life considerably, and also improve the riding qualities of the truck, particularly when lighter loads are to be carried at high speeds. Although the aluminum axle will cost a little more than the conventional axle, truck operators should be able to write off this increased cost in a reasonably short ime because the reduction in dead weight will permit them to carry more payload."

The aluminum rear axle was developed by Timken engineers, who worked closely with engineers of Aluminum Co. of America in the design of the castings for the housing, hubs and brake shoes. Timken's decision to produce the new axle is the result of more than a year of severe road and laboratory tests in which the aluminum axle satisfactorily passed every requirement demanded of comparable units built with heavier metal parts.

## Improved Safety and Styling Highlights 1946 FWD's

WITH its production plans geared to the greatest peacetime truck demand in history, The Four Wheel Drive Auto Co. of Clintonville, Wis., is operating at peak capacity.

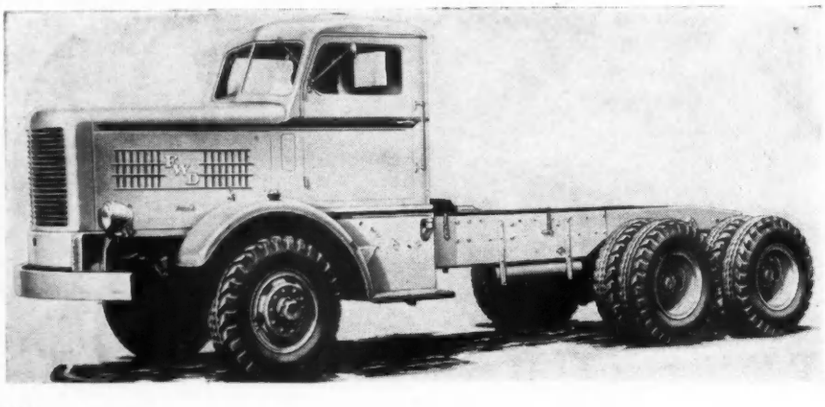
The 1946 model FWDs are being built in three major weight classifications ranging from 3 to 15 tons' rated capacity.

FWDs in the H series line, classified as light-heavies, are rated at 3 and 4 ton capacity. U series FWDs are being built in the 5-ton classification. The company's M series line of trucks are being built with 10-ton rated capacity.

FWD six-wheel-drive tractors and trucks rated at 15-ton capacity are also included in the company's standard line and are listed as available for immediate delivery.

The 1946 FWD has been completely restyled for improved appearance and utility. Salient features of this restyling include modernized radiator grilles, streamlined fenders and skirting, and the new, more comfortable "Universal Safety Cab."

Axles, transmissions, and frames have been redesigned and reengineered for greater safety, greater speed, and greater durability.



## Chevrolet Truck Design Refined

A DIVERSIFIED 1946 truck line of 99 models on 9 wheelbases, incorporating improvements in design and material resulting from wartime experience, is announced by the Chevrolet Motor Division of the General Motors Corp.

Body models include pick-ups, panels, stakes, platform and high racks. Chassis are of the conventional and c.o.e. types.

Major changes from the 1942 wartime models are:

1. Regrouping of components provides buyers a wider choice of models to meet varying gross vehicle weight requirements.
2. A return to prewar materials, including bright metal trim, except where war-developed materials have proved of equal or better quality.
3. A general refinement of design and incorporation of mechanical improvements learned by five years of intense research in materials and wartime operation.

Among the new features in the 1946 trucks are increased payload capacity, improved load protection, newly designed seats and cushions for greater comfort, improved sealing of windshield and window glass, and the added protection of better weather stripping at the rear doors.

Medium and heavy-duty models have new wide-base wheel rims of advanced design, resulting in more positive steering control, reduced vehicle sway, better traction, greater tire and wheel durability, and quicker and easier tire changing.

## Body Builders Standardize Service

ONE hundred and seventy-eight truck body manufacturers met at the Edgewater Beach Hotel April 4, 5 and 6 for the third annual Lindsay Structure Truck Body Conference. Future planning and expansion of the nationwide services offered by the organization were the keynotes of the conference, with round table discussions on ways and means of meeting the urgent need for new truck bodies in the face of present material shortages.

"Fleet operators are facing a critical situation today due to the shortage of materials for new truck bodies," according to Owen S. Lindsay, vice-president of The Lindsay Corp. "By mid-summer we expect the materials situation to take a decided turn for the better and, with the truck body production facilities now available, body production will soon catch up with chassis output.

"Through the co-operation of The Lindsay Corp. acting as liaison, the independent manufacturers work together to render a nationwide service to the large national fleets, who need standardized equipment for economical operation. This is the first time in automotive history that a standardized service has been available on truck bodies."